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Mineral Policy Update 1985-89

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Centre for Resource Studies

Mineral Policy Update
1985-1989

Policy and Program Changes Affecting the Canadian Mineral Industry

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and

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Foreword

This volume continues the *Mineral Policy Updates* series last published in 1984. To those unfamiliar with the series, the *Update* should not be considered as a comprehensive description of all government activities related to the mineral sector. It provides an overview of the federal, provincial and territorial policy initiatives during the 1985-89 period. After consulting with government and industry representatives, we decided to combine coverage of these years into one volume, thereby avoiding unnecessary repetition. Future editions in the series will be published annually.

The *Update* covers only changes and new activities introduced over the five years, rather than ongoing and unaltered programs. For more comprehensive information on continuing programs and more background information, we refer the reader to the sources referred to in the notes and those listed in Appendix II. All the information is in the public domain; policies still in the development stage were included only if they were already in the process of public discussion.

For the purpose of the *Update*, the mineral industry is defined as the industrial sector engaged in mineral exploration and development, and the production and marketing of metallic minerals, metals, industrial minerals, coal and uranium. Except for oil sands, oil and gas are excluded.

Jurisdiction over mineral resources was determined originally under the provisions of the 1867 British North America Act, and subsequently under the Constitution Act 1982. While mineral resources in Canada belong to the provinces in which they occur, the federal government plays at least a dual role with respect to mineral policy and other activities affecting mineral development. First, under the Constitution, the federal government has jurisdiction over the territories and ownership of the minerals contained therein. The leading department in this role is the Department of Indian Affairs Northern Development. However, as is evident in the first four chapters, the federal role in the north is diminishing as some powers gradually devolve to the territorial governments and land claims are settled.

Second, the federal government is heavily involved in the mineral industry throughout Canada, by playing a coordinating role (as elaborated in the Resources and Technical Survey Act), and by undertaking policy, advisory, and regulatory responsibilities other than those based on ownership of the resources. These national responsibilities, usually exercised by Energy, Mines and Resources Canada (EMR) and other line departments, include such areas as the regulation of trade and commerce, national security, atomic energy, taxation, technology development, navigation, shipping and inland waters, banking, regional disparity, and undertakings involving more than one province. For example, under the Canada Explosives Act, EMR has sole jurisdiction over the regulation of manufacture, importation, transportation, and storage of explosives for all of Canada. In other areas, such as the use of explosives in mines, health and safety, environment, and trade, EMR advises and cooperates with provincial and federal regulatory agencies.

Some readers may feel that the role of municipal governments has been unduly neglected. As constitutional creatures of the provinces, local governments have often been given short shrift in Canadian documents and analyses.

Yet the relationship between local communities and nearby mining operations is a significant policy consideration, particularly in the areas of taxation, municipal watersheds and other environmental concerns, and community economic development. In Newfoundland, for example, municipal taxes are governed by the *Assessment Act, 1986* whereby property is assessed to form a tax base for property and school taxes. Pollution equipment, along with other mine buildings and equipment, would be included in the property assessment. In some cases, municipalities may agree with a company to substitute a grant system for property assessments, as is the case with Labrador City and the Iron Ore Company of Canada, and with Baie Verte and the Baie Verte Mines. Similar arrangements exist in other provinces.

Other municipal policy concerns include regional development where governments have set up special programs to promote diversification of northern areas. Two examples of this would be Manitoba's *Mining Community Reserve Fund* and the *Northern Ontario Regional Economic Development Program*. Municipalities are also increasingly involved in environmental policy issues. In Manitoba, residents of Winnipeg protested the proposed development of a gold mine at Shoal Lake, Ontario, for fear that the mine's activities would contaminate their drinking water.

While the relationship of municipal governments and the mineral industry merits closer attention, the extent of such an undertaking is beyond the capacity of this volume. Consequently, it focuses principally on the major policy initiatives undertaken during the 1985-1989 period by the federal, provincial and territorial governments.

As noted, the format has been changed slightly. Matters relating to the federal government, the Northwest Territories, and Yukon are discussed in separate chapters to accommodate a discussion of the rapid administrative changes that took place over the latter half of the 1980s. The provincial chapters conform fairly closely to the structure of the earlier *Updates*. There is considerable repetition as a result of overlap and multi-jurisdictional participation. In general, each chapter describes only those parts of a program or an agency's activities that relate to the jurisdiction that the chapter discusses. In such cases, the reader may wish to check all references to the program. The index has been designed to accommodate this cross-referencing, with the page numbers of each chapter listed at the bottom of each index page.

A glance at the table of contents will reveal that the information contained in this *Update* is first categorized according to political jurisdiction. Where policy initiatives have been jointly devised and/or administered by the federal and provincial, references to the policy should be found in either section. In the sections on the Northwest Territories and Yukon, the activities of the federal government are included in cases which involved close collaboration with the territorial government.

The second level of categorization broadly indicates how the initiatives were implemented: whether through direct investment, assistance programs, taxation, or some form of regulation. International trade is included as a distinct element in recognition of the increasing global nature of the minerals marketplace. Many of these sections are then further broken down into specific subject areas.

Moira Jackson
The Centre for Resource Studies

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This volume proved to be a much more extensive project than any of us at CRS had initially anticipated. Two years ago, we began the task of compiling a volume of material that described the major federal and provincial policy initiatives over a five-year period (1985-1989). This initiative could not have been accomplished without the insight, help and encouragement of all the staff at the Centre for Resource Studies. We are grateful for the rigorous and intelligent editing of Moira Jackson. We would also like to thank Cynthia Alexander, Michael Doggett, Brian Mackenzie, Gisèle Pharand, Dorothy Smith, Donna Stover and Margot Wojciechowski.

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We can't begin to mention all of the people who have provided assistance but we would specifically like to thank the following people: Glenn Kendall and Ron Sully (Energy, Mines and Resources Canada), Joseph Lazarovich (Department of Indian Affairs and Northern Development Canada), Roderic Hill (Yukon), Michael Cunningham, Tom Hoeffer, D.G. Patterson, (Northwest Territories), Susan Campbell, Bruce MacRae, Brian Parrott, Jack Patterson (British Columbia), Michael Day (Alberta), Mike Benson and Jane Forster (Saskatchewan), Ian Haugh and Lyle Skinner (Manitoba), John Gammon (Ontario), Gilles Mahoney (Québec), Garry MacEwen (New Brunswick), Pat Phelan and Richard Potter (Nova Scotia), and John Fleming and Byron Hynes (Newfoundland). Undoubtedly, there are some errors of omission or interpretation of fact; for these we accept responsibility.

Mary Louise McAllister
Tom Schneider

Contents

Foreword / iii

Acknowledgements / v

List of Acronyms / ix

1. **Federal Government**
    - Introduction / 1
    - The Mineral and Metal Policy / 3
    - Mineral-Related Task Forces and Studies / 4
    - Crown Corporations, Joint Ventures and Equity Participation / 5
    - Assistance Initiatives / 6
    - Regulation of the Mineral Industry / 15
    - Trade Initiatives / 22
    - Taxation Matters Affecting the Industry / 25

2. **Federal Policy Initiatives North of 60**
    - Introduction / 28
    - A New Land Claims Mandate / 28
    - The Northern Mineral Policy / 29
    - A Northern Political and Economic Policy Framework / 31

3. **Yukon**
    - Introduction / 33
    - Mineral-Related Task Forces and Studies / 34
    - Assistance Initiatives / 35
    - Regulation of the Mineral Industry / 38
    - Trade Initiatives / 39

4. **Northwest Territories**
    - Introduction / 40
    - Assistance Initiatives / 41
    - Regulation of the Mineral Industry / 43
    - Taxation Matters Affecting the Industry / 44

5. **British Columbia**
    - Introduction / 45
    - Mineral-Related Task Forces and Studies / 46
    - Assistance Initiatives / 48
    - Regulation of the Mineral Industry / 51
    - Trade Initiatives / 55
    - Taxation Matters Affecting the Industry / 56

6. **Alberta**
Introduction / 59
Mineral-Related Task Forces and Studies / 60
Crown Corporations, Direct Investment/Equity Participation / 61
Assistance Initiatives / 62
Regulation of the Mineral Industry / 64
Trade Initiatives / 66
Taxation Matters Affecting the Industry / 67

7. **Saskatchewan**
Introduction / 69
Mineral-Related Task Forces and Studies / 70
Crown Corporations, Direct Investment/Equity Participation / 70
Assistance Initiatives / 72
Regulation of the Mineral Industry / 75
Trade Initiatives / 78
Taxation Matters Affecting the Industry / 80

8. **Manitoba**
Introduction / 82
Crown Corporations, Direct Investment/Equity Participation / 83
Assistance Initiatives / 84
Regulation of the Mineral Industry / 85
Trade Initiatives / 89
Taxation Matters Affecting the Industry / 89

9. **Ontario**
Introduction / 92
Mineral-Related Task Forces and Studies / 94
Crown Corporations, Direct Investment/Equity Participation / 96
Assistance Initiatives / 96
Regulation of the Mineral Industry / 100
Trade Initiatives / 105
Taxation Matters Affecting the Industry / 105

10. **Québec**
Introduction / 108
Crown Corporations, Direct Investment/Equity Participation / 109
Assistance to the Mineral Industry / 110
Regulation of the Mineral Industry / 115
Trade Initiatives / 116
Taxation Matters Affecting the Industry / 117

11. **New Brunswick**
Introduction / 119
Mineral-Related Task Forces and Studies / 120
Assistance Initiatives / 120
Regulation of the Mineral Industry / 123
Taxation Matters Affecting the Industry / 124

12. **Nova Scotia**
    Introduction / 126
    Mineral-Related Task Forces and Studies / 127
    Assistance to the Mineral Industry / 127
    Regulation of the Mineral Industry / 128
    Trade Initiatives / 130
    Taxation Matters Affecting the Industry / 131

13. **Prince Edward Island**
    Introduction / 132
    Assistance Initiatives / 132
    Taxation Matters Affecting the Industry / 132

14. **Newfoundland**
    Introduction / 134
    Mineral-Related Task Forces and Studies / 135
    Crown Corporations, Direct Investment/Equity Participation / 135
    Assistance Initiatives / 135
    Regulation of the Mineral Industry / 137
    Taxation Matters Affecting the Industry / 138

Appendix I / 140

Appendix II Principal Sources / 142

The Authors / 148

The Centre for Resource Studies / 149

CRS Publications / 150

Index

List of Acronyms

AECB	Atomic Energy Control Board
AIP	Agreement-in-Principle
BRITEQ	Bureau de Recherche sur l'Industrie de la Tourbe dans l'Est du Québec
CANMET	Canada Centre for Mineral and Energy Technology
CCARM	Centre Canadien d'Automatisation et de Robotique Minière
CCDP	Canadian Continental Drilling Program
CDC	Canada Development Corporation
CEIP	Canadian Exploration Incentive Program
CETA	Community Economic Transformation Agreements
CJS	Canadian Jobs Strategy
CNMDA	Canada/Newfoundland Mineral Development Agreement
COATS	Canadian Over-the-Counter Automated Trading System
COMDA	Canada/Ontario Mineral Development Agreement
CRM	Centre de Recherche Minérales
CYI	Council for Yukon Indians
DGEGM	Direction Générale de l'Exploration Géologique et Minérale
DIAND	Department of Indian Affairs and Northern Development
DOE	(U.S.) Department of Energy
EDA	Economic Development Agreement
EIA	Environmental Impact Assessment
EMR	Energy, Mines and Resources Canada
EPA	(U.S.) Environmental Protection Agency
ERDA	Economic and Regional Development Agreement
FAME	Financial Assistance for Mineral Exploration Program
FIRA	Foreign Investment Review Agency
FEARO	Federal Environmental Assessment Review
LFDS	Labour Force Development Strategy
FTA	Canada-United States Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GNWT	Government of the Northwest Territories
GIS	Geographic Information Systems
GREP	Ground Control and Emergency Preparedness in Ontario Mines
GSC	Geological Survey of Canada
ILO	International Labour Organization
INRS	Institut National de la Recherche Scientifique
ISTC	Industry, Science and Technology Canada
LRIS	Land-Related Information System
LTFV	Less than fair value
MDA	Mineral Development (Subsidiary) Agreement
MEDA	Mineral Economic Development Agreement
MEND	Mine Environment Neutral Drainage Program
MEIP	Mineral Exploration Incentives Program
MESP	Mineral Exploration Stimulation Program
MHRIP	Mining Human Resource Investment Program
MIAP	Mineral Industry Assistance Program
MISA	Municipal/Industrial Strategy for Abatement

MISP	Mineral Investment Stimulation Program
MITEC	Mining Industry Technology Council of Canada
MNACC	National Advisory Council to CANMET
MNDM	Ministry of Northern Development and Mines
MNR	Ministry of Natural Resources
MPIP	Mineral Processing Investigations Program
NCPC	Northern Canada Power Commission
NDSA	Northern Development Subsidiary Agreement
NFA	Northern Flood Agreement
NTAP	Northern Technology Assistance Program
NMIP	Northern Mining Information Program
OMEP	Ontario Mineral Exploration Program
OPAP	Ontario Prospectors Assistance Program
OSC	Ontario Securities Commission
OSLO	Other Six Leases Operation
PAIP	Programme d'Accélération des Investissements Privés
PCS	Potash Corporation of Saskatchewan
PAP	Prospectors Assistance Program
PPIC	Potash and Phosphate Institute of Canada
SAGIT	Sectoral Advisory Committees on International Trade
SGF	Société Générale de Financement
SMDC	Saskatchewan Mining and Development Corporation
SNA	Société Nationale de l'Amiante (Asbestos)
SPOT	Système Pour l'Observation de la Terre
SOQUEM	Société Québécoise d'Exploration Minière
SSP	Stock Savings Plan
TFN	Tungavik Federation of Nunavut
UC	Unemployment Insurance
WC	Workers' Compensation
WCB	Workers' Compensation Board
WHIMIS	Workplace Hazardous Materials Information System

1. Federal Government

Introduction

Industry Trends

> The leading mineral commodities produced in Canada, in terms of value, are nickel, zinc, copper, gold and coal. Canada ranks first in the western world's production of nickel, zinc and uranium concentrate and second in potash, asbestos and gypsum production. In 1989, total direct employment in mining, including extraction, milling, smelting and refining (excluding oil, gas, and oil sands) accounted for 108,756 jobs. This represented a marginal increase over the 1985 figure of 108,230 jobs.[1]

Canada's mineral production values rose in nominal terms from $15 billion in 1985 to $20 billion in 1989. Cost-cutting remained a priority during the mid-1980s as the mineral industry had to cope with sluggish demand and surplus capacity for most mineral and metal commodities. The single bright spot was gold, which continued to draw strong investment. In most cases, however, the mineral industry was grappling with shifts in trading patterns, increased competition and changing technologies. The economy continued to improve each year and, gradually throughout the decade, mineral production was brought closer into balance with demand. Consequently, rising prices, improved productivity and strengthening demand gradually brought a renewed vigour to the Canadian mineral industry by 1989.

Highlights of Government Initiatives

Two issues dominated the federal agenda: the environment and the economy. On the environmental front, the rising level of public environmental consciousness and activism was heightened and legitimized by international initiatives such as the United Nations' World Commission on Environment and Development (Brundtland Commission). Domestically, The Canadian Council of Resource and Environment Ministers responded in October 1986 by establishing a National Task Force on Environment and Economy. At this time, "the central tenets of a method of harmonizing environmental and developmental concerns began to take shape."[2]

Governments also began to pass more stringent environmental protection legislation. For the mining industry, meeting the more rigorous environmental standards represents significant increases in production costs. The federal government provided various forms of assistance to help the industry meet new standards and requirements. Companies were given direct financial assistance to modernize their pollution-control equipment through vehicles such as the Acid Rain Abatement Program. Research assistance was also available through such agencies as the *Canada Centre for Mineral and Energy Technology (CANMET)*, the research and technology development arm of Energy, Mines and Resources Canada (EMR). CANMET contributed to significant advances in a number of technologies and procedures respecting the management of hazardous mineral by-products through various research programs, e.g. the Mine Environment Neutral Drainage (MEND) program. CANMET also assisted with technology transfer activities by organizing workshops and seminars with industry personnel.

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[1] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*, pp. 72.51-72.53.

[2] Robert Boardman, ed., *Canadian Environmental Policy: Ecosystems, Politics, and Process*, Toronto, Oxford University Press, 1992, p. 32.

The heightened level of environmental awareness during this period was accompanied by growing concerns about the workplace environment. Responding to these concerns, the federal government introduced the Workplace Hazardous Materials Information System (WHMIS). This program requires all employers to implement practices to ensure that employees are fully informed on all aspects of handling hazardous materials on the job.

Contending public perspectives related to policy with respect to Aboriginal land claims, protected park areas and other forms of land use restrictions generated a high degree of apprehension amongst prospectors and developers.

While the process of managing concerns about the environment, workplace health and safety, and access to land served to raise the level of regulation and restriction placed upon the industry in these areas, the government's handling of the economy took the opposite approach. In an attempt to stimulate the post-1981 recession economy, the federal government moved toward deregulation in a number of areas which had direct consequences for the mineral industry. In November 1984, the newly elected Conservative government published *An Agenda for Economic Reform*, a document which set out its philosophy of economic management and introduced a framework for economic recovery. The document identified the major economic challenges facing the nation and stressed the need to encourage private sector initiative while making government less "obstructive." One of the principal objectives of the new agenda was to improve the competitive position of Canadian business domestically and abroad.

In adopting this market-led strategy, the government revised its foreign investment policies, privatized some of its Crown corporations, and introduced a number of regulatory changes. The Foreign Investment Review Agency (FIRA), for example, was replaced by Investment Canada in June 1985. With the new agency, the government significantly reduced its regulatory scope in this area, seeking instead to stimulate and facilitate domestic and foreign business investment in Canada.

The federal government initiated the Canada-U.S. free trade negotiations in 1986 in an attempt to improve access to the important U.S. market. This move was strongly supported by The Mining Association of Canada, since the industry sells the majority of its mineral and metal commodities to the U.S. market. The Free Trade Agreement (FTA) was formally signed in 1988 and came into effect 1 January 1989.

The federal government's goal of liberalizing trade was supported by changes in transportation policy, particularly through the new *National Transportation Act*, which came into effect in 1988. The deregulatory thrust of the Act was designed to promote a competitive environment between rail shippers and the railway companies. It was hoped that this Act would lead to lower costs for the mineral resource shippers who make up approximately half of the freight tonnage carried by rail in Canada.

Consistent with its overall strategy for economic change, the federal government introduced complementary initiatives in the mineral policy sector. The policy of reducing regulatory constraints and stimulating private initiative was reinforced in 1987 with the release of *The Mineral and Metal Policy of the Government of Canada*. The policy statement set out the federal government's role, objectives and strategies for encouraging the development of the country's mineral and metal resources for the benefit of all Canadians. These included measures to encourage fiscal and regulatory stability, promotion of resources for regional development, export market assistance, research and development assistance, and adjustment programs for one-industry towns facing mine closures. Essentially, the goal of the policy was to be "supportive, but not interventionist," in its relations with the mineral industry.[3]

Assistance programs were also implemented and revised during this period, with significant benefits for the mineral industry. One of the largest initiatives was delivered through the federal/provincial Mineral Development Agreements (MDAs) which were designed to stimulate mineral exploration and development. The MDAs also provided programs to assist in the development of safe and efficient processing operations, and funded market studies to investigate new commercial opportunities. Although forerunners of the MDAs had existed since 1970, the mid-80s round was structured to allow substantially more provincial input into the administration of funds and delivery of programs. Several new Mineral Development Agreements were being negotiated as the old ones expired. The new MDAs, however, were smaller in scope and funding.

By the end of the decade, in view of the burgeoning national debt, the government was reassessing its approach to financial assistance programs. This was the policy atmosphere when the federal government's Mining Exploration Depletion Allowance (MEDA) under the Income Tax Act was replaced with the short-lived grant scheme – the Canadian Exploration Incentive Program (CEIP).[4]

The 1983-1988 MEDA system provided a much-needed boost to the junior exploration sector by stimulating high levels of exploration investment. In 1989, following the replacement of the MEDA with the CEIP, exploration activity relative to the previous year was greatly reduced. Exploration funds raised by flow-through shares in the first six months of 1989 totalled $125 million, in contrast to the $480 million generated during the same period in 1988. A number of factors contributed to the decline in exploration activity, including uncertainty over the new CEIP grant system for junior exploration companies, falling gold prices (upon which most junior exploration activity is focused), and the slow return of investor confidence following the 1987 stock market crash.

In spite of the general recovery experienced in the latter half of the 1980s, the perceived reduction of government support, in conjunction with other factors, left the mineral industry anxious and uncertain about its prospects as it entered 1990.

The Mineral and Metal Policy

Shortly after the Conservative government took office in 1984, a Ministerial Task Force on Program Review was struck to examine government operations.

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[3] Notes for a speech by the Honourable Jake Epp, Minister of Energy, Mines and Resources, The Annual Convention of the Prospectors and Developers Association, Toronto, 6 March 1989.

[4] Both these programs were designed to address financial risks associated with mineral exploration.

Following the September 1985 release of the task force report, steps were taken to formulate an explicit policy for minerals- and metals-related actions by the Government of Canada. In May 1987, responding to this recommendation, the federal government published a document entitled *The Mineral and Metal Policy of the Government of Canada.*

The policy statement acknowledged that significant changes in mineral supply, demand, technology and marketing were reshaping the manner in which mineral deposits would be discovered and developed. Given these new circumstances, the federal government recognized that it, too, must adapt in order to maintain a flexible and supportive relationship with the industry.

Six objectives were outlined in the policy statement:

- to provide a fair and balanced fiscal and regulatory framework;
- to foster the development of the minerals and metals sector as a foundation for regional economic development;
- to promote improved technological performance and increased international competitiveness in all facets of the industry;
- to assist workers and communities affected by industrial adjustment;
- to facilitate enhanced mineral and metal exports and access to new and traditional markets; and
- to provide timely and accurate economic, technical and scientific information required by the industry and by the federal and provincial governments, labour and the general public.

While the statement provided no new funding, the Minerals and Metals Policy was consistent with the government's overall economic strategy to stimulate the private sector, reduce regulatory barriers, and promote a stable investment environment.[5]

Mineral-Related Task Forces and Studies

Federal/Provincial Task Force on the Expanded Use in Ontario of Low-Sulphur Western Canadian Coal. In 1986 a task force was formed to examine the potential for marketing western coal to Ontario. (This should be distinguished from the Alberta/Ontario Task Force on Expanded Use in Ontario of Low-Sulphur Western Canadian Coal, which was set up in 1984.) The task force report, released 20 August 1986, suggested that increased use of the western low-sulphur coal (to replace some of the higher-sulphur U.S. coal) would help to lower sulphur dioxide emissions at Ontario Hydro's generating plants. The low-sulphur coal was considered to have market potential because new emission control regulations required Ontario Hydro to cut sulphur dioxide emissions by more than one-half by 1994. In 1985 the utility was buying 7.8 million tonnes of medium-sulphur coal from Pennsylvania and West Virginia. The average sulphur content of 2.0 percent to 2.5 percent for the U.S. coal was substantially higher than the 0.2 to 0.87 percent for the western Canadian coal, of which Ontario bought 3.1 million tonnes in 1985.[6] The report also argued that the use of the western coal had the potential to create 205,000 person-years of employment within Canada over the following fifteen years, and to generate $4.1

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[5] Energy, Mines and Resources Canada, *The Mineral and Metal Policy of the Government of Canada*, May 1987.

[6] "Western Canadian Low-Sulphur Coal: Its Expanded Use in Ontario," report of a federal/provincial task force, June 1986.

billion in income. The western coal, however, was more expensive than the coal imported from the United States, primarily because of transportation costs.

Action Committee on Western Canadian Low-Sulphur Coal. The Action Committee was established in 1987 in response to the Federal-Provincial Task Force Report on Western Canadian Low-Sulphur Coal. The Action Committee, chaired by the Deputy Prime Minister of Canada, included representatives from British Columbia, Alberta, Saskatchewan and Ontario. All members approved the call to support the technological developments necessary to increase the competitiveness of western coal in Ontario. The Committee's Intergovernmental Secretariat identified fourteen projects, at an estimated cost of $81 million, for research, development and precommercial demonstration. In 1988, the Committee endorsed these funding recommendations. The costs were to be shared by the federal and provincial governments, as well as by the private sector, which would be responsible for commercializing the technology once the demonstration phases were successfully completed.

The federal government stated that it was prepared to commit up to $27 million from the Western Economic Diversification Fund towards these projects.[7] One of the projects involved research into the possibility of transporting a coal/oil slurry through existing oil pipelines to Ontario.

Action Force on Arctic Initiatives. The federal and N.W.T. governments established action forces in 1986 to strengthen the territorial economy (see Chapter 4).

Technological Impact Research Fund. A study conducted at the Cambrian College Labour Studies Program reported in 1987 that 63 percent of 489 Inco miners believed technological changes in their workplace had a negative impact on their lives. The study was supported by a $58,000 Technological Impact Research Fund grant from Labour Canada. An additional $80,000 was granted by Labour Canada to interview those directly affected by technological change, including laid-off workers and early retirees. The survey group recommended that the government examine several issues, including economic alternatives for resource-dependent communities, effective advance employment training, better employment initiatives, and initiatives that would support worker mobility.[8]

Crown Corporations, Joint Ventures and Equity Participation

Canada Development Corporation (CDC). In 1985 CDC, a federal holding corporation, accepted an offer from Falconbridge Ltd. to purchase CDC's 100 percent equity in Kidd Creek Mines Ltd. The offer included $140 million in cash (thus reducing CDC's debt), as well as shares in Falconbridge. With a 20 percent equity in Falconbridge, CDC became the company's second-largest shareholder.

Eldorado Nuclear Ltd. Efforts throughout 1985-87 to sell the federally owned uranium producer, Eldorado Nuclear Ltd., were unsuccessful. Eldorado Resources Ltd., a wholly owned subsidiary, continued its exploration efforts for uranium and for other minerals, principally gold. Uranium exploration was

[7] Office of the Deputy Prime Minister. "News Release," 26 May 1988.

[8] "Miners see technological change having negative impact – survey," *The Sudbury Star*, 4 May 1987. See also, *The Sudbury Star*, 5 May 1987.

concentrated in the vicinity of existing mills near Rabbit Lake and Key Lake, Saskatchewan. In 1988, Eldorado Resources received environmental approval to proceed with its plans to develop an underground uranium mine at Eagle Point, Saskatchewan.[9]

Cameco Corporation. Shortly after environmental approval was announced for the Eagle Point uranium project in Saskatchewan, the Canadian and Saskatchewan governments announced an agreement-in-principle to merge and privatize the federal Eldorado Nuclear Ltd. and provincial Saskatchewan Mining and Development Corporation. The new entity, created in 1988, was initially named CAMECO – Canadian Mining and Energy Corporation. On 1 November 1990, the name was shortened to Cameco Corporation. The new corporation employs over 1,200 employees and controls assets worth approximately $1.6 billion. Cameco is owned by the governments of Saskatchewan (61.5 percent) and Canada (38.5 percent). A series of share offerings is expected to divest the governments of their holdings by 1995.[10]

Nanisivik Mines Limited. In October 1986 the federal government announced that its 18 percent equity interest in Nanisivik Mines Limited had been sold. The government's share in the silver/lead/zinc mine on northern Baffin Island was sold for $6 million to the majority shareholder, Mineral Resources International Limited of Toronto. A federal-territorial committee, directed by the Department of Indian Affairs and Northern Development (DIAND), continued to monitor the operation.[11] It was originally established because of the social, environmental and economic sensitivities of Canada's then most northerly mine.

The *Cape Breton Development Corporation* (Devco). Formed in 1967 to manage the federally owned Nova Scotia coal mine and encourage economic development in the region, the wholly owned federal Crown corporation was restructured in 1988. Previously subdivided into two sections (the Coal Division and the Industrial Development Division), the new Devco consisted solely of the Coal Division. A new Crown corporation (Enterprise Cape Breton Corp.) was formed to house the Industrial Development Division. Legislation enacting the change became effective 1 December 1988.

In 1987, at a cost of $218 million, the new Phalen Mine in Nova Scotia became operational and the expansion of the Victoria Junction Coal Preparation Plant was completed. Coal sales during this same fiscal period reached the highest point since 1982, totalling 3 million tonnes (a gain of 11 percent over the previous year). Nova Scotia Power Corp. bought 68 percent of the coal produced. In 1988/89 Devco employed 3,300 people at its three operating collieries.[12]

Assistance Initiatives

Direct Assistance/Grants and Subsidies

The Canadian mineral industry received direct federal assistance during the 1985-89 period through a number of organizational channels, including broad agreements such as the *Mineral Development Sub-Agreements* negotiated with the provincial and territorial governments; specific project funding sources, such as the *Research Agreement Program* offered by CANMET; and a number of other federal-provincial agreements and committees such as the *Action Committee on Western Canadian Low-Sulphur Coal*. Government assistance was made available in the latter half of the decade on a number of fronts, including fostering international competitiveness and trade liberalization, supporting technology and innovation in the mineral industry, and developing assistance programs to facilitate exploration and development.

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[9] *The Northern Miner*, Vol. 73, No. 48, 8 February 1988, p. 1.

[10] Canada/Saskatchewan, "News Release/Communiqué," 22 February 1988. See also, *The Northern Miner*, 29 February 1988.

[11] *Ottawa Letter*, Vol. XVII, No. 97, 3 November 1986, p. 786.

[12] Cape Breton Development Corporation, *Annual Reports, 1987/88 and 1988/89.*

Mineral Development Agreements (MDAs)

Commonly referred to as the Mineral Development Agreements, these federal-provincial programs are actually sub-agreements of the existing *Economic and Regional Development Agreements (ERDAs)*. The mineral development components of the ERDAs were implemented in order to stimulate the provincial mining industries and focused on four principal areas: geoscience, extraction and processing technology, economic development, and public information. A summary of the 1985-89 MDAs is given in Table 1.

By the end of 1986, MDAs had commenced or were being negotiated with all of the provinces and territories except Alberta, which had not identified mineral development as a priority under its ERDA. In most cases, the agreements covered a five-year period. Total financing for the MDAs was approximately $261 million; of these funds, $147 million was provided by the federal government and $114 million was contributed by the provinces and territories. The MDA program was administered at the federal level by Energy, Mines and Resources Canada.[13] The funds were spent on programs delivered mainly by federal and/or provincial government agencies.

A 1986 amendment to the New Brunswick MDA authorized the province to deliver two federally funded programs involving the *Mineral Investment Stimulation Program (MISP)* and the *Mineral Processing Investigations Program (MPIP)*. The MISP provided up to $1 million to stimulate private-sector investment in the province's mineral development. The MPIP put $400,000 towards research into methods for improving process recoveries of minerals and metals.[14] Similar amendments to the Newfoundland and Nova Scotia agreements enabled these provinces to take over geoscience programs previously conducted by the federal government.

The scope of Québec's original MDA was expanded in 1986 to include a program for promoting the sale and production of asbestos. The Québec and federal governments also agreed to share the costs of a $5.5-million prospector's assistance program designed to renew interest in mineral prospecting in the Lower St. Lawrence and Gaspé regions. While many metal-bearing zones had previously been identified, little of the region had been systematically explored.[15]

Newfoundland, New Brunswick, Nova Scotia and Prince Edward Island entered into a joint Mineral Development Agreement project in 1987 to gather geological and geophysical information about the ocean floor. Earth & Ocean Research Ltd. was hired to compile available sample information pertaining to mineral resources in waters of 50 m depth or less. The information was entered

[13] Energy, Mines and Resources Canada, *World Mineral Notes*, Vol. 5, No. 3, July 1989.

[14] *Provincial Pulse*, No. 16, 1986, p. 190.

[15] *Ottawa Letter*, Vol. XVII, No. 105, 1986, p. 857.

Table 1. Survey of federal-provincial mineral development agreements

Province or Territory	Total Value of Agreement ($ million)	Cost-Sharing Formula	Time Period	Delivery: % Canada % Province	Major Components/Projects: Project Name	Budget ($,000's)	Delivery: % Canada % Province
British Columbia	$10	50/50	1985-1990	96% B.C. 4% Canada	Geoscientific Surveys	6,650	90% British Columbia
					Geoscience Data Systems	450	94% British Columbia
					Market, Technical & Feasibility Studies	1,250	100% British Columbia
					Financial Assistance for Mine Development	1,120	100% British Columbia
					Management, Public Information, Evaluation	530	100% British Columbia
Saskatchewan	$6.4	n/a	1984-1989	50% Canada 50% Saskatchewan Parallel Work Delivery	Geoscience	5,340	41.2% Canada 51.8% Saskatchewan
					Minerals Technology	400	100 % Canada
					Mineral Development	400	100% Canada
					Public Information	240	79.2% Canada 20.8% Saskatchewan
Manitoba	$24.7	60% Federal 40% Provincial	1984-1989	60% Canada 40% Manitoba	Sector A - Geoscientific Activities	13,000	38.5% Manitoba
					Sector B - Research & Technology	7,430	37.2% Manitoba
					Sector C - Development Studies	1,770	50% Manitoba
					Sector D - Public Information, Evaluation & Administration	2,500	50% Manitoba
Ontario	$30	50/50	1985-1990	63% Ontario 37% Canada	Geoscience Program	18,350	64% Ontario
					Information Exchange		100% Ontario
					Productivity & Technology	3,500	100%
					Economic Development	4,500	96%
					Public Information, Evaluation & Administration		
Québec	$100	50/50	1985-1990	96% Québec 4% Canada	5 Volets		
					Activités geoscientifiques	34,750	Québec
					Recherche et développement sur l'amiante	8,000	Québec-Canada
					Infrastructure de développement minerale		
					Désenclavement de l'industrie québecoise du mineral de fer	42,000	Québec
					Information au public	15,000	Québec
						250	Québec

Province or Territory	Total Value of Agreement ($ million)	Cost-Sharing Formula	Time Period	Delivery: % Canada % Province	Major Components/Projects		
					Project Name	Budget ($,000's)	Delivery: % Canada % Province
New Brunswick	$22.3		1984-1989	30% N.B. 60% Canada	Geoscience	12,373	31% N.B.
					Mining & Minerals Technology	3,275	8% N.B.
					Economic Development	4,861	57% N.B.
					Public Information, Evaluation, Administration	1,798	16.6% N.B.
Nova Scotia	$26.9	60/40	1984-89	60% Canada 40% Nova Scotia	Geoscience	14,507	62% Canada
					Mineral Technology	4,982	66% Canada
					Development Studies	1,841	48% Canada
					Mineral Investment Stim. Program (MISP)	1,600	80% Canada
					Public Information	1,215	37% Canada
					Administration	2,800	47% Canada
Newfoundland	$22	50/50	1984-1989	45% Newfoundland 55% Canada	Geoscience Surveys	16,400	52% Newfoundland
					Mining & Mineral Technology	2,100	29% Newfoundland
					Economic Development Studies	1,500	17% Newfoundland
					Public Information, Evaluation & Administration	2,000	30% Newfoundland
P.E.I.	$0.3	80/20	1986-1989	100% P.E.I.	GEOSCIENCE		
					- Onshore Aggregate Resources	290.6	100% P.E.I.
					- Public Information and Evaluation	9.4	100% P.E.I.
Yukon Mineral Resources Subagreement	$3.9	90/10 Canada/ Yukon	1985-1989	100% Canada	Geological Mapping	1,100	100% Canada
					Geochemistry	2,200	100% Canada
					Placer Mining	600	100% Canada
NWT Mineral Development Subsidy Agreement	$7	70% Federal 30% Territories	1987-1991	n.a.	Geoscience	5,700	Canada/N.W.T.
					Northern Technology Assistance Program	1,000	N.W.T.
					Northern Mining Information Program	300	N.W.T.

Source: *Provincial Geologists Journal*, Vol. 6, 1988.

into the database at EMR's Atlantic Geoscience Centre in Dartmouth, Nova Scotia. In 1988, a series of summary maps and reports became available through the provincial Department of Mines offices.[16]

A $3-million, federally funded assistance package was negotiated for Curragh Resources (which owned and operated the former Cyprus Anvil Mine in Faro, Yukon) under the *Mining Industry Recovery Sub-Agreement* of the Canada-Yukon Economic Development Agreement.[17] In return, Curragh agreed to a number of commitments at the mine, including the creation of a Trusteed Environmental Fund and the preparation of a plan to develop mineral deposits on the Vangorda Plateau by the end of 1988.

Geoscience Data Assistance

Canadian Continental Drilling Program (CCDP). In 1986, the CCDP was designed to provide new geoscience information on the Canadian land mass which can be obtained only through borehole drilling. The information gathered would complement data collected through the (proposed) Lithoprobe Program (see below) and the existing Ocean Drilling Program. The steering committee of the CCDP was formally established with the support of the Geoscience Council of Canada, following a 1986 meeting of government, industry and university representatives, all of whom expressed widespread interest in the program. The committee's first priority was to draw up a five-year plan of operations and to call for conceptual drilling proposals. By December 1987, the steering committee had received 29 proposals. Funding to initiate the first five-year phase of the CCDP was still being sought in 1991.[18]

Sherbrooke Institute of Cartography. The long-proposed Sherbrooke Institute became a reality in 1988, charged with leading the survey and mapping industry in Canada into a high-technology future. With its staff of 100, the Institute is responsible for conducting research and development in geographical data information systems, and for revising topographic maps of eastern Canada.[19]

Système Pour l'Observation de la Terre (SPOT). Canada and France signed two agreements in 1986 involving Canada's use of remote sensing data from France's SPOT satellite system. Data from SPOT made it possible to utilize a wide range of new remote-sensing applications in mapping and geology. The unique stereo coverage capacity of the SPOT sensors was noted to be particularly useful for topographic surveying and mineral exploration. The SPOT data were used in conjunction with the U.S. Landsat satellite, providing a better guarantee of data continuity, should either system fail. The Canada Centre for Remote Sensing was to pay SPOT IMAGE about $1.1 million per year, plus royalties on products.[20]

Geographic Information Systems (GIS). The federal government and the provinces reached a series of agreements in 1988 concerning the development of computerized mapping in Canada. The GIS system of computerized maps revolutionized the way geographic information is used and stored. It allows digitized map information to be combined with a database to produce new and different perspectives of the country and its resources. Under the terms of the memoranda of understanding reached with the provinces, EMR committed an initial $8 million to share the costs of GIS initiations with the provinces. Matched funding from the provinces will raise the total investment to $16 million.[21]

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[16] Energy, Mines and Resources Canada, *Ocean Mining Notes*, No. 2, May 1987 and No. 3, March 1988.

[17] Yukon, "EDA Update," October, 1986.

[18] "A Major New Geoscience Program for Canada," *CIM Bulletin*, Vol. 80, No. 901, p. 50.

[19] Energy, Mines and Resources Canada, "News Release," 19 August 1987.

[20] Energy, Mines and Resources Canada, "News Release," 24 July 1986.

Lithoprobe Program. In January 1987, the federal government announced this five-year, $25-million study of the earth's crust. The high-technology sensing equipment, which can probe up to 100 km below the surface, will be used in four regions across the country. The project is aimed at studying geological processes within the continental lithosphere. Researchers also expect their findings to provide long-term benefits to the Canadian mining and petroleum industries.[22]

Research and Development

The Canada Centre for Mineral and Energy Technology (CANMET). One of three organizations which make up the Mineral and Energy Technology Sector at Energy, Mines and Resources, the organization serves as the primary research and technology development arm of the department. CANMET has three branches: Energy Technology, Mineral Technology, and Policy, Planning and Services. It has research facilities in the National Capital Region (Ottawa), Nova Scotia, Varennes (near Montreal), Northern Ontario, and Alberta. CANMET's objective is to develop "safer, cleaner and more efficient methods to extract, process and utilize Canada's mineral and energy resources."[23]

During the period under review, the government introduced new research and development policies aimed at increasing the contribution of federal laboratories to national economic development. One initiative particularly applicable to laboratories engaged in technological R&D, such as CANMET, was the *Technology Centres Policy* of 1986. Its purpose was to increase the influence of industry on federal R&D programs and promote more direct collaboration with industry. In response to this policy, CANMET underwent major restructuring designed to increase its ability to operate in partnership with industrial clients and to strengthen its role in technology transfer and marketing.

Another initiative aimed at increasing the industrial relevance of CANMET was the formation of the Minister's National Advisory Council to CANMET (MNACC). Chaired by industry and composed mainly of industrial representatives, the advisory body provides advice on CANMET's programs directly to the Minister. One current activity of MNACC is advising CANMET on the development of a new intellectual-property policy to facilitate industrial use of technology developed by CANMET.[24]

Coal Research Centre. The $22-million Coal Research Centre at Devon, Alberta, opened in September 1985 with funding from the federal and Alberta governments. The Centre was occupied by the staff of CANMET's Coal Research Laboratory, the coal department of the Alberta Research Council, and the Coal Mining Research Centre, a private nonprofit company.

[21] Minister of State for Forestry and Mines, "News Release," 11 August 1988.

[22] Government of Canada, "News Release," 20 January 1987.

[23] CANMET, *Annual Report 1988-89*, p. 4.

[24] Energy, Mines and Resources Canada, *Annual Report 1988/89*.

In June 1989, CANMET decided to phase out (over the next year) the surface coal mining portion of its operations at Devon. This plan was discussed with industrial clients and advisors and received their approval. The laboratory had a staff of 12 and an annual budget of about $1 million. The decision was based on the relatively low impact of the laboratory, compared to higher-priority areas such as coal preparation and utilization, and environmental technologies for coal and oil sands mining. The resources released were to be used in these higher-priority areas. Some contract funding for surface mining R&D, mainly on environmental control, was to be continued for about three years.

In January 1988, the Minister of State for Forestry and Mines announced that CANMET and the Coal Association of Canada would fund a joint study to recommend new coal research and development plans. One component of the program is to develop an industrial business plan to facilitate the implementation of government-funded coal research, which amounts to approximately $20 million per year.[25]

Mining Research Laboratory. In the fall of 1985, operations began at CANMET's $5-million Elliot Lake Mining Research Laboratory. The 4,000-square-metre facility, staffed by 30 research scientists, technicians and support personnel, replaced the original rented laboratory near Elliot Lake. The laboratory is outfitted with equipment worth almost $2 million. Research focuses on three main areas related to hard-rock mining: mining technology, health and safety in mines, and control of the surface environment.

With support through the government's Biotechnology Program (a component of the Strategic Technologies Policy), government-industry-university R&D has achieved encouraging results in the application of biotechnology to the mining industry. The research is coordinated through a network known as BIOMINET. One successful example is a bioleaching process for the extraction of uranium, which was used by Denison Mines at Elliot Lake, Ontario. Other technologies under development include the recovery of metals from waste streams and biological techniques to control acid drainage from tailings.

Canada-Ontario-Industry Rockburst Project. Following two major rockbursts in 1985 in Sudbury-area mines, this $4.2 million, five-year Rockburst Project was jointly funded in 1986 by the Ontario mining industry and the governments of Canada and Ontario. The project was designed to develop national expertise in the detection, understanding and, ultimately, control of rockbursts in Canadian mines. The first phase was completed in 1989 with the successful design, construction and installation of new seismic monitoring equipment. CANMET provided the main group of scientific and technical personnel. Other participants included the Geological Survey of Canada, the Ontario Ministry of Labour, the Ontario Ministry of Northern Development and Mines, and a number of Ontario mining companies.[26]

Complementing the rockburst studies to improve safety in underground mines, Canada and the United States also embarked on a cooperative research program on rock mechanics and ground control. The objective of the program, which involved CANMET, the Ontario Ministry of Labour, and the U.S. Bureau of Mines, was to develop new technology to reduce mine accidents caused by ground movements such as rockbursts and roof falls.[27]

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[25] Minister of State for Forestry & Mines, "News Release," 20 January 1988.

[26] Energy, Mines and Resources Canada, "News Release," 14 August 1986, and *Annual Report 1988-89*, p. 11.

[27] Energy, Mines and Resources Canada, "News Release," 25 March 1986.

New Diesel Emission Control Technology. In 1986, the results were released of a seven-year research and development program to assess and improve the air quality in underground mines. The international R&D program involved CANMET, the Ontario Ministry of Labour, and the U.S. Bureau of Mines. Details announced in May 1986 by the federal and Ontario governments indicated that the program, aimed at reducing exhaust emissions from diesel-powered machinery, had achieved its objectives. In addition to improving working conditions in underground mines, the new technology also offered a substantial reduction in mine ventilation costs, better visibility underground, and increased productivity. The new filtration technology was delivered in a three-year technology transfer program to the private sector through five mining companies, CANMET, and the private supplier ORTECH International (formerly, the provincially owned Ontario Research Foundation), and Engine Control Systems Limited.[28]

Sulphur Dioxide Research. In 1988, CANMET cooperated with the University of British Columbia, the Natural Sciences and Engineering Council, and Inco Ltd. on a research project to study the use of flash smelting to produce copper-nickel concentrates. The goal was to reduce the level of sulphur dioxide emissions released into the atmosphere.[29]

Methane Detection Research. The Domtar Chemicals Group and CANMET began a joint three-year project in 1988 to monitor methane levels in Domtar's salt mine at Goderich, Ontario. The innovative remote-sensing system uses a video terminal and printers at the surface, connected to environmental sensors underground. If the methane concentration exceeds the defined acceptable levels, visual and audio signals will alert mine management to the danger. An automated ventilation unit is an eventual goal of the research.[30]

Mine Tailings Research. As part of the federal program to assist the mining industry in meeting environmental standards, CANMET conducted research projects in cooperation with Canadian mineral processors. A number of mine tailings projects were undertaken, including the *National Uranium Tailings Management Program*, the *Reactive Acid Tailings Program* (later called MEND), and the *Potash Tailings Program*.[31]

Mine Environment Neutral Drainage (MEND). The MEND program, originally called the Reactive Acid Tailings Program, was launched in 1988. It followed a CANMET study into the mineralogical characteristics of mine tailings, several years of joint R&D field trials, and negotiation among the participating organizations. Program participants included CANMET, as the secretariat and lead agency of the federal government, Canadian mining companies and organizations, Environment Canada, and the governments of British Columbia, Manitoba, Ontario, Québec and New Brunswick. The program was developed to continue research on economically and environmentally sound solutions to the problem of acid drainage from tailings and mine wastes containing sulphide residues, especially over the long term following closures of operations.

Funding for the program was initiated by a $4-million commitment from The Mining Association of Canada. CANMET provides administrative support, research expertise, and project-by-project contract funding for the program.[32]

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[28] Canada/Ontario, "News Release," 2 May 1986.

[29] "Environmental Politics," *The Northern Miner*, 12 September 1988, p. 4.

[30] Energy, Mines and Resources Canada, "News Release," 26 October 1988.

[31] Minister of State for Forestry and Mines, "Notes for an Address," 20 January 1987.

[32] "Keeping MEND on the move," *The Northern Miner*, 15 May 1989, p. 4.

By 1989, 19 projects were underway and six more had been approved. The estimated cost for all the programs was $5.25 million. Of this amount, 45 percent was to be provided by industry, 43 percent by the federal government, and 12 percent by the provinces. The provincial share was expected to increase in subsequent years, as Québec and Ontario were just establishing their respective provincial MEND task forces in 1989.[33]

Research Agreements Program. During the 1986-89 period, EMR provided research support of approximately $1.4 million per year through this program. The funds went to 40 research centres across Canada, mainly in universities, in support of numerous projects in the natural, physical and social sciences as well as engineering. The funding was roughly equally divided among earth sciences, energy and mineral research.[34]

ISTC's Technology Outreach Program. A new mining advisory group was formed in 1987 called the *Mining Industry Technology Council of Canada (MITEC).* MITEC assists in identifying the industry's research and development needs, as well as coordinating research and funding among the different organizations. MITEC was developed under the leadership of The Mining Association of Canada, with participation from the mining industry, the federal government, universities, and other research institutions.

In 1989, MITEC received $914,000 from the *Technology Outreach Program* of Industry, Science and Technology (ISTC). The funding was allotted for a number of projects including the development of an industry-wide skills database, and for services to assist in coordination among and between the mineral industry, researchers, and related technology suppliers.[35]

Iron Ore Flotation Recovery. The Minister of State for Forestry and Mines announced in March 1988 that EMR would participate in a one-year joint venture with the Iron Ore Company of Canada. The $897,000 project was aimed at improving recovery of fine iron ore at the company's Carol Lake Mine in Labrador. Approximately 20 percent of the fine ore was being lost in the tailings stream at the Carol Lake concentrator. Incorporating a flotation recovery technology developed by CANMET was expected to increase the average iron ore recovery from 72 percent to over 80 percent.[36]

Human Resources Assistance

Canadian Jobs Strategy (CJS). The Canada Jobs Strategy was launched by Employment and Immigration Canada in 1985 after consultations with the provinces, business and labour. The purpose of CJS was to assist workers, the unemployed, business and local communities to address the problems associated with rapid technological and economic changes. Programs created under the strategy included Skills Investment, Job Entry, Job Development, Skills Shortages, Community Futures and Innovations.

Labour Force Development Strategy (LFDS). In 1989 the federal government released a policy paper, *Success in the Works*, which outlined the LFDS. The new program marked a further step in the evolution of the CJS initiative.

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[33] CANMET, *Annual Report 1989-90.*

[34] Energy, Mines and Resources Canada, "News Release," 13 June 1986, and 16 April 1987.

[35] "The Science Dollar," *Science & Government Bulletin*, September 1989, p. 6.

[36] Ministry of State for Forestry and Mines, "News Release," No. 88/45, 10 March 1988.

LFDS retained the level of training expenditures under the CJS ($1.8 billion in 1988) but also took steps to redirect approximately 10 percent of the Unemployment Insurance (UI) program payments. The shift was designed to move approximately $1.3 billion from social insurance/income support payments into more active skills development programs beginning in 1990. About $800 million of this total was allocated to upgrading labour force skills.

The LFDS was designed to achieve four goals:

- a substantial increase in the private sector's role in training workers and in ensuring that training is more responsive to current labour market needs;
- a re-alignment within the UI program, so that more expenditures are directed to active training and re-employment measures for the unemployed;
- in compliance with the Charter of Rights and Freedoms, a significant improvement in UI benefits, to better respond to the needs of working parents and to encourage the full participation of workers over 65; and
- a reduction of work disincentives in the UI program.[37]

One feature of the program was the allotment of $100 million to assist older and displaced workers who are having difficulty finding other jobs. Other features included an additional $100 million for entry-level skills training under the Canada Jobs Strategy and a doubling of the funding for the *Industrial Assistance Strategy* to $30 million per year to fund labour/management problem resolution.

Financing for the strategy was to be provided through savings arising from stricter entry requirements for unemployment insurance benefits and shorter benefit periods.[38]

Mining Human Resource Investment Program (MHRIP). A mining-specific joint private-sector/government pilot initiative was designed in 1985 to provide employment opportunities for unemployed and under-employed post-secondary and technical school graduates at a time of dramatic downsizing of the mining industry. The project provided incentives to companies to continue hiring young technicians and professionals during the downturn. MHRIP was administered by The Mining Association of Canada, and funded by Employment and Immigration Canada through its CJS program. It was initially expected that 65 intern participants would be provided with 12 months of subsidized employment over the 19 months of the program at a cost of $975,000. At its completion in March 1988, the program had approved and placed 45 interns over a two-year period at a cost of $450,163 in wage and benefit subsidies.

Regulation of the Mineral Industry

Land Access and Tenure

National Marine Parks Policy. At the September 1986 Annual General Meeting of the Canadian Parks and Wilderness Society, federal Environment Minister Tom McMillan released the National Marine Parks Policy. Approved following several years of consultation with federal and provincial agencies, special interest organizations, and the general public, the policy will not allow commercial exploration, extraction or development of non-renewable resources in national marine parks.[39]

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[37] Employment and Immigration Canada, *Success in the Works*. A policy paper on the Labour Force Development Strategy for Canada, 1989.

[38] *The Public Sector*, Vol. 13, No. 15, 17 April 1989.

Task Force to Review Comprehensive Claims. After years of only marginal progress in settling native land claims, the federal government appointed a Task Force to Review Comprehensive Claims. Its report, released in May 1986, recommended a number of major changes to the fifteen-year-old federal claims policy. The government responded to the report in December 1986 with a policy statement on reforms to the land claims process.[40]

Northern Mineral Policy. The Northern Mineral Policy, announced by Indian Affairs and Northern Development Minister Bill McKnight in December 1986, introduced a number of changes to the regulatory environment faced by the northern mineral industry. In terms of land access, the policy recommended that there be no unilateral ban on mineral staking on lands outside of the areas already identified in native land claims. This had been suggested as a way of preventing third-party alienation of lands which might subsequently be included in the claims process. Furthermore, properly registered claims in lands subsequently withdrawn as part of the native claims process would remain valid, even if ownership of the land were transferred. Existing regulatory mechanisms, such as the land use and water permit approval process, remained in place during the negotiation process.[41]

Canada-Yukon Agreement on Land-Use Planning. The federal and Yukon governments signed a land-use agreement in 1987. The agreement established a mechanism for comprehensive land use planning throughout the territory. The agreement involves a cooperative process between DIAND, the Government of Yukon, and the Council for Yukon Indians.[42]

Agreement-in-Principle (AIP) – Council for Yukon Indians. In December 1988, the Council for Yukon Indians ratified an AIP on its land claim involving 41,439 square kilometres of land, including 25,899 with subsurface title.[43]

The Tungavik Federation of Nunavut (TFN) Land Claim. The TFN is the organization that represents the 17,500 Inuit of the eastern Northwest Territories. In August 1987, TFN land claim negotiators initialled an agreement over entry and access to Inuit lands. For third-party interests holding surface and subsurface rights, this agreement means that Inuit would become the landlords and collect the fees and rents.[44]

In 1989, an agreement-in-principle was reached between the federal government and the TFN. Under the agreement, the ownership of 349,000 square kilometres of land (roughly 11 percent of the total NWT land area) was to be transferred to Inuit title, including 36,257 square kilometres with subsurface rights. In addition, the federal government was to provide the Inuit with $580 million in cash and a share in future resource royalties. The Inuit were also guaranteed representation on a number of land and resource management boards.[45]

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[39] Environment Canada, *National Marine Parks Policy*, 1986.

[40] Canadian Arctic Resources Committee, *Northern Perspectives*, Vol. 15, No. 1, 1987, p. 3.

[41] Energy, Mines and Resources Canada, *The Northern Mineral Policy*, 1986, p. 13.

[42] Department of Indian Affairs and Northern Development, *Annual Report 1987*, p. 14.

[43] Department of Indian Affairs and Northern Development, *Annual Report 1988-89*.

[44] Department of Indian Affairs and Northern Development, *Agreement-in-Principle Between the Inuit of the Nunavut Settlement Area and Her Majesty In Right of Canada*, 1990.

[45] Department of Indian Affairs and Northern Development, "Communiqué," 1-8940-2.

The Dene/Metis Land Claim. After almost eight years of negotiations, some progress could be noted towards resolution of the Dene/Metis land claim. In September 1988, the federal government signed an agreement-in-principle providing the approximately 13,000 Dene/Metis of the western Northwest Territories with ownership of 180,000 square kilometres of land (5.5 percent of the total N.W.T. land area), a $500-million cash payment, and a share of future resource royalties. The agreement also provided for Aboriginal participation in joint management boards which would regulate land and resource use.

The next stage in the negotiations process was the interim protection of land (i.e. prevention of new third-party alienation), as the land selection process continued.[46] As part of this process, in the spring of 1989 the federal government withdrew from staking 63,431 square kilometres north of Great Slave Lake. The withdrawal prohibited any new leases or development but did not affect current permits, licences and/or leases.[47]

Labrador Inuit Land Claim. In January 1989, negotiations began with the Labrador Inuit over a land claim covering northern Labrador and offshore. The Government of Newfoundland and Labrador, the federal government, and the Labrador Inuit Association participated in the negotiations.[48]

Mining Regulation

Offshore mining. By 1986, growing interest from the mining industry in offshore non-fuel minerals, such as sand and gravel, high-purity silica and placer gold, prompted the Canada Oil and Gas Lands Administration and the Mineral Policy Sector of EMR to prepare draft legislation concerning prospecting, exploration and development of these resources. Existing mining and public lands leasing regulations did not address the administration of offshore non-fuel mineral resources.[49] To facilitate the development of ocean mining, EMR, in consultation with the provinces and other federal departments, released a discussion paper in 1987 entitled *A Framework for Mining Legislation on Offshore Non-Fuel Minerals*. The development of offshore mining was also one of the objectives cited in the 1987 *Mineral and Metal Policy of the Government of Canada*.

In 1988, EMR concluded its initial discussions with the provincial and territorial governments, industry, and other interested parties concerning the proposed offshore mining regulations. In 1989, legislative options were being examined.

The EMR initiative covers offshore mining south of an administrative line of convenience established by EMR and DIAND. North of the line, the administration of sand and gravel management (for construction of artificial islands in the Beaufort Sea, for example) is carried out by DIAND on leases granted under the Public Lands Grants Act.

Yukon Fisheries Protection Agreement. In May 1988, the federal government brought in new legislation intended to end conflict between the *Yukon Placer Mining Act*, the *Fisheries Act* and the *Northern Inland Waters Act*.[50] The new Yukon fisheries protection agreement, which was implemented in 1989, categorizes streams and prohibits mining in areas that are recognized as salmonspawning grounds. Water licence disputes are to be handled by a *Yukon Placer Mining Implementation Review Committee*.[51] The mining industry generally reacted positively to the new policy because it introduced certainty and workable standards into an area that was previously governed by conflicting regulations.[52]

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[46] Department of Indian Affairs and Northern Development, "Transitions," October 1988, p. 1.

[47] "Certainty sought," *Mining Review*, July/August 1989, p. 19.

[48] Department of Indian Affairs and Northern Development, *Annual Report 1988-89*, p. 7.

[49] Energy, Mines and Resources Canada, *Departmental Regulatory Agenda*, 21 April 1986, p. 22.

[50] "Mining Matters," *Mining Review*, July/August 1988, p. 13.

Environmental Regulation

Environmental Protection Act. At a 1986 seminar on regulatory reform, hosted by the Department of the Environment and the Air Pollution Control Association, the Environment Minister indicated that legislation for an Environmental Protection Act would be tabled in 1987. Two reports, which formed the basis of the impending legislation, were released at the seminar. One was the final report of the committee established in 1985 to examine the 11-year-old Environmental Contaminants Act. The other, a report entitled "From Cradle To Grave: A Management Approach to Chemicals," concerned the control of development, testing, handling and disposal of toxic chemicals. A number of minerals and mineral compounds such as mercury and nickel were among the substances identified. Nickel was later removed. In June 1988, the federal government passed the *Canadian Environmental Protection Act (CEPA)*. Under the Act, all phases of the life-cycle of toxic compounds are regulated. Sanctions of jail terms and fines of up to $1 million per day are prescribed for violators of the Act.[53]

National Task Force on the Environment and the Economy. The task force was established by the Canadian Council of Resource and Environment Ministers following the 1986 visit of the United Nations' Brundtland Commission to Canada. The task force was composed of seven environment ministers, seven representatives of major industries, two environmental organization representatives and one academic. The mining industry was represented by Inco Ltd. vice-president Roy Aitken, who also acted as co-chairman. On 24 September 1987, the task force presented its report at the annual meeting of Canadian resources and environment ministers.

The task force report urged the Prime Minister and the Premiers to establish high-level round tables, composed of Cabinet ministers, industrialists, and environmentalists, which would report to the first ministers. The report warned of the need for major changes in the way economic developments are planned. Some of the 36 recommendations included

- creating environmental performance awards with tax credits for companies that exceed standards;
- increasing recycling and improving waste disposal;
- developing environmental education programs;
- increasing public input into the planning process;
- encouraging business leaders as well as managers to take responsibility for protection of the environment;
- sharing technology among the larger and smaller companies;

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[51] "Changing Fortunes," *Mining Review*, July/August 1989, p. 17.

[52] "Placer miners welcome new policy for Yukon," *The Northern Miner*, 13 June 1988.

[53] Environment Canada, *Annual Report 1988-89*.

- requiring all companies to institute environmental principles and policies.[54]

Acid Rain Abatement Program. In 1985, The federal government and the governments of Québec, Ontario, Manitoba, Prince Edward Island and Newfoundland agreed to work jointly towards reducing sulphur dioxide emissions from all sources in Canada to 2.3 million tonnes per year by 1994; this represents a reduction of 50 percent from 1980 allowable levels.

In 1986 the Mineral Policy Sector of EMR, in consultation with provincial and industrial partners, completed a study of the nonferrous smelter industry in Canada. The study was designed to identify a strategy to encourage industrial development while upholding environmental goals. The results of the study were used in the development of Canada's policy on sulphur dioxide emissions. The federal government's 1986 Acid Rain Abatement Program established targets and a timetable for reducing sulphur dioxide emissions by 1994 to half of the level of emissions in 1980. Part of this policy included an offer from the federal government to provide financial assistance to the nonferrous metal industry in its efforts to modernize and reduce sulphur dioxide emissions.[55]

The Acid Rain Abatement Program involved assistance to Noranda Minerals Inc. and to Hudson Bay Mining and Smelting Co. Limited for smelter modernization as follows:

Noranda Horne Smelter		HBM&S Flin Flon Smelter	
Federal	$ 42.7 million	Federal	$ 25.0 million
Québec	$ 41.7 million	Manitoba	$ 55.0 million
Company	$ 40.0 million	Company	$107.0 million
Total	$125.0 million	Total	$187.0 million

The total federal contribution was $67.6 million, or 21.7 percent of the total $312 million. The program ended in December 1991 with the conclusion of the Hudson Bay Mining and Smelting deal.

Transportation of Dangerous Goods Act. This Act came into effect in three stages over 1985 (23 January, 8 April and 1 July), and was designed to provide a uniform system for the identification of wastes and control of their transportation across Canada. The movement of designated "dangerous goods" by air, marine and rail is governed by the federal Act, with parallel regulations adopted by the provinces to govern road transport. Some of the products which fall within the scope of the Act include explosives, gases, flammable solids and liquids, radioactive materials, corrosives, and other miscellaneous products or wastes.

The Transport of Dangerous Goods Directorate (within Transport Canada) was divided into three sections: the Regulatory Affairs Branch, the Risk Management Branch, and the Compliance Branch. The Directorate was set up to work closely with the Atomic Energy Control Board, Environment Canada, the Explosives Branch of EMR, and Health and Welfare Canada.[56] For example, the regulations require that Environment Canada be alerted regarding any imports or exports of hazardous wastes. The system was developed in cooperation with industry and the provincial governments.

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[54] Government of Canada, *National Task Force on Environment and Economy*, 24 September 1987. See also, "Task force urges joint action on environment," *The Globe and Mail*, 25 September 1987.

[55] Energy, Mines and Resources Canada, *Annual Report 1986/87*, p. 19.

[56] Transport Canada, *Transportation of Dangerous Goods*, Publications TP3105, October 1990.

Under the new Act, the Department of Transport acquired the responsibility for the enforcement of regulations for road transport of explosives. The Explosives Branch of EMR, however, retained responsibility for the classification of explosives for transport, and for providing related expertise to the Transport of Dangerous Goods Directorate. The provinces subsequently revised their transportation acts to conform to the new federal legislation.

Effective 1 June 1986, the (federal) *Explosives Regulations* were amended to increase the fees payable for the issue and renewal of licences for factories and magazines and for permits to import and transport explosives.[57]

In 1987, EMR was considering recommendations to the Department of Transport that the maximum permissible truckload of dynamite be increased from the current 5,000 kilograms to 20,000 kilograms. The cost saving for transportation of such a change in the regulation was estimated to be over $1 million a year.[58] Under the *Transport of Dangerous Goods Regulations*, the proposed increase to 20,000 kilograms was later approved (in 1991), but only under specified operating conditions.

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. In the spring of 1989, Canada and 115 other countries negotiated the terms of the Basel Convention (under the United Nations Environment Program) which came into force in March 1990. The Convention places significant limitations and bonding requirements on the international movement of secondary materials, including recyclables.[59]

Leaded Gasoline Regulations. Environment Minister Tom McMillan announced plans in 1987 to reduce the lead level in gasoline to 0.026 grams lead per litre by 1993 – the same level as set in the United States. The content of lead in gasoline is regulated by the Leaded Gasoline Regulations under the *Clean Air Act*.

Health and Safety Regulation

Atomic Energy Control Board (AECB). In 1986, the AECB commissioned an $850,000 study on the health effects of breathing air laden with uranium dust. The five-year project was one of the first major attempts to document the hazards and effects of radioactive uranium dust in the mining industry.[60]

Workplace Hazardous Materials Information System (WHMIS). Effective 31 October 1988, all employers in Canada were required to comply with federal legislation regarding hazardous materials in the workplace. WHMIS was initiated by the federal government and subsequently adopted by all of the provinces. Under the legislation, the employer is held responsible for informing and educating employees in the safe handling of dangerous materials. The WHMIS legislation, however, did not impose a uniform education system upon employers. Each province or even employer may use a different program.[61]

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[57] *Canada Gazette, Part II*, April 1986.

[58] Office of Privatization and Regulatory Affairs, *Federal Regulatory Plan 1987*, p. 162.

[59] Energy, Mines and Resources Canada, *World Mineral Notes*, Vol. 6, No. 2, March 1990, p. 9.

[60] "AECB to study risk from uranium dust," *The Globe and Mail*, 10 January 1986.

[61] "Preparing for WHMIS," *Mining Review*, July/August 1988, p. 63.

Transportation Regulation

(See also Transportation of Dangerous Goods Act in the Environmental Regulations section.)

Motor Vehicle Transport Act (Bill C-19). Following a federal-provincial agreement signed in 1985, the federal government introduced Bill C-19 (which became law in 1987) in an attempt to create a uniform system of regulations for interprovincial trucking. A transition period was established, ending January 1988, at which time rate regulation and other licence conditions were to be removed.[62] Further uniformity of regulations between the provinces and federal government was reached in 1988 with the signing of a memorandum of understanding, setting the minimum level of weights and dimensions to be allowed for commercial vehicles operating in Canada. To monitor implementation of the standards, an interjurisdictional committee was organized to review revisions to the regulations and/or recommend further research.[63]

National Transportation Act (Bill C-18). In 1985, the federal government released its discussion paper, *Freedom to Move*. Following consultations with business, labour, and consumer groups, revisions to the National Transportation Act were introduced early in 1986. The revised Act became law in January 1988, ending monopolies held by Canadian National Railway (a federal Crown corporation) and CP Rail (a division of Canadian Pacific Ltd.). The goals of the legislation were to promote a more competitive environment, encourage lower prices for shippers and foster a more efficient transportation system.[64] Along the lines of the U.S. Staggers Act (1980), the amendments gave Canadian shippers and the railways the freedom to negotiate confidential contracts on both domestic and trans-border traffic. A new measure introduced by section 134 was a Competitive Line Rate when a shipper is dependent on a single railway.[65]

Foreign Investment Regulation

Investment Canada. The Foreign Investment Review Agency (FIRA) was replaced by Investment Canada in June 1985. The new agency was given the mandate to "promote and facilitate" business investment throughout the country, as opposed to the more protectionist mandate of FIRA. Investment Canada is responsible for reviewing large investments by non-Canadians to ensure that Canadian public policy objectives are not impaired by foreign acquisitions. Direct acquisitions of businesses in Canada with assets exceeding $5 million, or indirect acquisition of businesses with assets exceeding $50 million, are subject to the review provisions of the *Foreign Investment Review Act*. Furthermore, investments in sectors deemed "culturally sensitive" may be subject to review, regardless of amounts invested, on the recommendation of the Minister for Investment Canada. In the case of Canadian minerals, foreign ownership is regulated only with respect to investment in Canada's uranium industry (see uranium under *International Trade*).[66]

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[62] "Mineral Transportation," *Canadian Mining Journal*, February 1987, p. 19.

[63] *The Public Sector*, 29 February 1988, p. 3.

[64] *Alberta Report*, 14 July 1986, p. 15.

[65] Iain Wallace, *The Changing Transportation Environment of the Canadian Mineral Industry*, Centre for Resource Studies, Queen's University, Kingston, 1987, p. 6.

[66] S. Gordon, ed., *Canadian Sourcebook 1990*, Southam Business Information and Communications Group Inc., Don Mills, Ontario.

Trade Initiatives

International Trade

Canada-U.S. Free Trade Agreement (FTA). Estimates for 1990 indicate that 53.9 percent (by value) of Canadian mineral products are destined for the United States, followed by Europe at 13.4 percent and Japan at 13.1 percent.[67] Attempts to nurture these markets were evident in a number of actions taken during the 1985-89 period. Dominating the international trade agenda during this period were the discussions between Canada and the United States concerning the bilateral FTA. An agreement-in-principle was reached in 1987. The final agreement was signed in 1988 and came into effect 1 January 1989. Although some tariffs were removed immediately, most will be phased out over a period of five to ten years.

The FTA generally follows the intentions of the General Agreement on Tariffs and Trade (GATT) in eliminating trade-distorting measures to create a free or open market between the participants. It also includes a mechanism for the resolution of disputes between the two nations. The Mining Association of Canada supported the agreement as a positive development for the Canadian mineral industry, by limiting the "scope and impact" of trade actions which have increasingly been directed against Canada by U.S. mining interests.[68]

General Agreement on Tariffs and Trade. In the arena of multilateral agreements, Canada hosted a 1988 ministerial review meeting concerning the GATT. In September 1986, agreement was reached on the objectives and subject matters of the next multilateral trade negotiations, called the "Uruguay Round" of the GATT. The negotiations, which continued into the 1990s, included measures to reduce the use of subsidies and countervailing duties among the member countries.[69]

Sectoral Advisory Committees on International Trade (SAGITs). Fourteen SAGITs representing different industrial sectors were formed in 1986 to advise the Canadian negotiators in the Canada-U.S. Free Trade Agreement and international trade issues. The SAGITs were designed as a means of communication between government and the private sector on international trade issues in general. The primary responsibilities of each SAGIT were to identify the areas of concern for each industrial sector and to assist government officials by providing technical expertise and information. The chairperson of the minerals and metals SAGIT was selected from the industry.

Pacific 2000. Initiatives aimed at expanding and securing Canadian trade in the Pacific Rim countries were given priority during the 1980s. Four new Canadian trade offices opened in the Pacific region during 1985.[70] In 1989, the Department of External Affairs announced Pacific 2000, a trade strategy designed to further enhance Canada's share of the world trade in Asian countries.[71] The strategy was made up of four components: Pacific Business Strategy, Pacific 2000 Language and Awareness Fund, Japan Science and Technology Fund, and Pacific 2000 Projects Fund. The component most relevant to the mineral industry was the Pacific Business Strategy, which comprised trade promotion activities, key sector market penetration, and increased trade representation in the region.

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[67] The Mining Association of Canada, *InfoMac*, Vol. 3, No. 6, July 1991, p. 2.

[68] The Mining Association of Canada, "A Message to Mining Industry Employees...," 5 October 1987.

[69] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989.*

[70] "Trade Opportunities," *Canadian Export*, 15 June 1989.

[71] *The Public Sector*, Vol. 13, No. 21, 29 May 1989.

Going Global Investment Program (GGIP). Pacific 2000 is part of a larger GGIP initiative created by External Affairs and International Trade Canada. GGIP includes similar investment opportunity assistance for industries conducting or contemplating trade in the United States or European markets.[72]

Mineral Trade Issues. The federal government has been involved on numerous fronts with mineral trade issues. The details of these developments in each of the commodities are well documented in EMR's *Canadian Minerals Yearbook*. The following highlights a few of the more salient trade concerns in the latter half of the 1980s.

Asbestos. Industry representatives, in conjunction with EMR, launched a number of marketing missions in 1985 in order to assess regulatory developments, market opportunities and technical problems in the asbestos industry. A kit containing information on health and other issues was prepared for use by Canadian representatives abroad.

In 1986, following the United States Environmental Protection Agency (EPA) proposal to ban asbestos, the Canadian government submitted formal objections and participated at EPA hearings on the proposal. Nevertheless, the EPA announced in 1989 that the United States would gradually phase out production, imports and use of asbestos, beginning in 1990. The phase-out period is expected to cost Québec producers approximately $40 million per year. The Canadian government, in concert with Québec, the asbestos industry, and the asbestos workers' unions, has carried out an international campaign in an attempt to prevent decisions similar to the EPA ruling from being taken in other countries, and to improve understanding of the hazards related to the use of asbestos. Contact was made with approximately 100 International Labour Organization (ILO) countries to advocate Canada's position on continued but controlled asbestos use. At the June 1986 ILO Conference in Geneva, the "ILO Convention," which embodied the controlled-use philosophy, was adopted.[73]

Uranium. From 1985 to 1989, Canada produced approximately one-third of the Western World's natural uranium. About 85 percent of Canadian production was exported during this period, with some 45 percent of the exports going to the United States.

Prior to 1985, all exports of Canadian uranium were to be refined and processed in Canada, as long as the federally owned Eldorado Nuclear had sufficient capacity at its refinery and conversion facilities and could make a competitive bid. Exemptions from this policy granted by the government between 1979 and 1983 had allowed 27 percent of all uranium exports over the period to leave Canada in the raw "yellowcake" state for processing and upgrading abroad. Following the expansion of Eldorado's uranium-processing capacity, the federal government in 1985 redefined its policy regulating exports of unprocessed uranium, allowing fewer exemptions to the earlier export restrictions.

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[72] External Affairs and International Trade, Canada, *Going Global Guide to Programs and Services*.

[73] "The selling of asbestos...," *The Montreal Gazette*, 22 October 1987, and "Québec planning to fight...," *The Globe and Mail*, 7 July 1989.

In 1986, Canadian uranium producers lobbied both Ottawa and Washington over proposed U.S. protectionist legislation aimed at restricting imports of foreign uranium. In June 1986, a U.S. District Court (District of Colorado) had ruled that the U.S. Department of Energy (DOE) had failed in its obligation to fulfil requirements under the 1954 Atomic Energy Act regarding the maintenance of a viable domestic uranium industry. (Under the U.S. Atomic Energy Act, in order to prevent dependence on foreign uranium sources, a review must be conducted whenever uranium imports exceed the guidelines set out in the Act.)[74] The Court ordered the DOE to eliminate the enrichment of foreign-sourced uranium after 31 December 1986. Although the ruling was affirmed in July 1987 by the U.S. Court of Appeals, on 15 June 1988 the Supreme Court reversed the appeals court ruling, stating that the statute did not require automatic import restrictions.

With the signing of the Free Trade Agreement in 1988, the court challenge was dropped.[75] A provision under the FTA prohibits further enrichment embargoes directed against Canada. In turn, Canada eliminated its requirement that Canadian uranium necessarily be upgraded before export to the United States. This issue was of tremendous importance to Saskatchewan producers, with high-grade orebodies that are very competitive against the lower-grade, high-cost U.S. producers.

A new foreign ownership policy regarding Canadian uranium mines was announced in December 1987. The new policy, designed to encourage investment in the Canadian uranium industry, continued to require majority Canadian ownership and control. Under the new policy, however, if the project is controlled by Canadians, less than the 51 percent minimum Canadian participation may be permitted. Exemptions to the regulations could be permitted in situations where Canadian partners cannot be found. The effect of the new regulation will be greater flexibility for Canadians attempting to raise capital for uranium projects.[76]

Potash. In response to the petition filed by two New Mexico potash mining companies, the U.S. Commerce Department reached a preliminary determination in 1987 that Canadian potash producers were guilty of dumping in the United States. With the finding, heavy duties were applied against Canadian potash.

Saskatchewan reacted to these actions by introducing the *Potash Resources Act*, which gave the province control over the volume of production in all of the province's potash mines. Restrictions on the amount of potash produced enabled the province to force a rise in the world price for potash. Since Saskatchewan was supplying a significant portion of their potash demand, U.S. agricultural consumers of this widely used fertilizer component opposed the U.S. duties (and consequent higher prices) and contributed to the pressure being placed upon the Department of Commerce to reverse its position on the issue.

At the same time, the Canadian government made representations to the Department of Commerce on its concerns over the validity of the petition. The Mineral Policy Sector of EMR and External Affairs were instrumental in providing arguments to the U.S. International Trade Commission, contributing to the eventual resolution of the issue.

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[74] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*. See also, D. Haglund and A. von Bredow, *U.S. Trade Barriers and Canadian Minerals: Copper, Potash and Uranium*, Centre for Resource Studies, Queen's University, Kingston, 1990.

[75] D. Haglund and A. von Bredow, *op. cit.*, pp. 127-128.

[76] Government of Canada, "News Release," No. 87-310, 23 December 1987.

The Commerce Department subsequently suspended its antidumping investigation, following a minimum-price agreement reached with Canada in 1988.[77]

Taxation Matters Affecting the Industry

General Taxation

Personal Income Tax. In the federal budget of 23 May 1985, the government introduced a cumulative tax exemption for capital gains up to a lifetime limit of $500,000. The exemption, which was designed to encourage savings and investment, was phased in over a six-year period and applied to individuals for gains realized after 1984.[78]

Corporate Income Tax. A surtax of 5 percent, on top of the federal rate of 36 percent, was introduced for the period from 1 July 1985 to 31 December 1986. The surtax applied to all federal corporate taxes owing prior to the deduction of various tax credits. Corporations qualifying for the small business tax rate were exempted.[79] A further 3 percent surtax (effective 1 January 1987) was imposed on the federal tax payable by most corporations.

The 26 February 1986 budget announced that reductions in the corporate income tax rate would be phased in over a three-year period, starting in July 1987. Subsequently, the general tax rate did decline from 36 percent in 1986 to 28 percent in 1989.

The 1989 budget, which was brought down on 26 April, proposed a new "paid-up capital tax" on large corporations with capital in excess of $10 million. The initial rate was set at 0.175 percent but implementation (through Bill C-28) was stalled in the Senate until 1990.

Diesel Fuel Sales and Excise Taxes. The 1985 budget announced that, effective 1 January 1987, the diesel fuel excise tax would be raised by one cent, bringing the total to three cents per litre. This was increased in 1987 to four cents per litre, where it remained through 1989. The sales tax on diesel fuel was 2.9 cents per litre in 1985, and closed in 1989 at a rate of 2.69 cents per litre, after reaching a high of 3.22 cents per litre in 1987. The rebate for off-highway use in commercial activities by primary producers was three cents per litre in 1985 and rose to four cents per litre by 1988. In the 26 April 1989 budget, the government announced that the excise tax component of the rebate (one cent per litre on diesel fuel) would end on 1 December 1989. The sales tax component of the rebate (three cents per litre on diesel fuel) was extended until 31 December 1990.

Mining Taxation

The May 1985 budget included a provision that denied the lifetime capital gains exemption to a portion of the proceeds of disposition of shares acquired by prospectors or grubstakers in exchange for an interest in a mining property.

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[77] Haglund and von Bredow, *op. cit.*

[78] Canadian Tax Foundation, *1985 Tax Developments*, Tax Memo No. 70, March 1986, p. 9.

[79] *Ibid.*, pp. 13-14.

The portion not eligible for the capital gains exemption is the lesser of proceeds of disposition or the fair market value at the time the shares were originally acquired. The proceeds in excess of acquisition value are eligible for the lifetime capital gains exemption.

Several technical amendments to the Income Tax Act were tabled in 1985, including a change in the definition of exploration expenses incurred in bringing a new mine into production. As well, income from iron ore processing beyond the pellet stage was henceforth to be treated as manufacturing and processing income rather than resource income.

Successor Corporation Rules. The 18 February 1987 budget amended the successor corporation rules to remove the clause which limited application of the rules to two transfer or acquisition successions. For example, transfer of the unused portion of the exploration and development expenses deduction was extended to grant all subsequent successor corporations the same treatment. The successor rules generally apply to situations where "there is a transfer of resource property from one taxpayer to another" or where "there is an acquisition of control of a corporation which has unclaimed exploration and development pools."[80]

Mineral Resource Defined. The 10 February 1988 budget announced that, effective 1 January 1988, kaolin (a clay used in making china and paper) would be defined as a mineral resource for tax purposes.

Flow-Through Financing. In 1985, the Income Tax Act was amended to permit exploration expenses incurred within 60 days of the end of the calendar year to qualify as an expenditure made in the calendar year for flow-through purposes. The amendment, which applied to expenses incurred after 31 December 1985, stipulated that the funds for exploration must have been advanced by the investor before the end of the calendar year.

The 26 February 1986 federal budget brought additional changes to the rules applicable to flow-through shares for the resource sector. The changes, according to the finance minister, were to make the rules "simpler and more effective." The major feature was the elimination of third-party investor liability. Under the new system, third-party liability would be retained by the issuing corporation because it would incur the Canadian exploration expense (CEE). After incurring the CEE, the corporation would renounce the expense to the investor who had previously subscribed for shares. Some analysts reported, however, that the new rules were far less flexible for resource companies than the old rules.[81] The new rules applied to flow-through-share agreements entered into after February 1986. Agreements signed between 1 March and 31 December 1986 still fell under the old rules, if the corporation elected not to apply the new rules.[82]

In October 1986 the finance minister confirmed that the review of the tax policy being conducted by his department would include an overall examination of the flow-through financing incentive for mineral exploration.[83]

Mining Exploration Depletion Allowance (MEDA). The MEDA component of the flow-through scheme was phased out in 1989 as part of Finance Minister Michael Wilson's tax reform package. During 1989, corporations, trusts and

[80] Parsons, Robert B., "Successor corporation rules – an update," *CIM Bulletin*, July 1987, p. 81.

[81] "Flow-through shares: today's rules," *Canadian Mining Journal*, October 1986, p. 14.

[82] Coopers & Lybrand, *The Mining Letter*, Vol. 4, No. 2, April 1987.

[83] "Whiff of flow-through death...," *The Northern Miner*, 1 December 1986.

individuals remained entitled to the depletion allowance at a rate of 16.7 percent on exploration expenses not covered by the CEIP.[84]

Canadian Exploration Incentive Program (CEIP). The new CEIP received Royal Assent on 21 July 1988 and took effect 1 January 1989. The program, which (unlike flow-through) worked outside the tax system, was designed to replace the old MEDA flow-through scheme.

The CEIP, which was aimed at junior exploration companies that had been using flow-through financing, offered a cash payment equal to 30 percent of exploration funds spent under a flow-through-share agreement. MEDA had offered a tax write-off of $133.33 on every $100 invested in flow-through shares.

The CEIP included the following provisions:

- eligible mineral exploration expenses included those which qualified for MEDA;
- the rate of 30 percent was guaranteed for two years, until the end of 1990, after which the rate was to be adjusted up or down according to market conditions;
- no prior approval was required before companies incur eligible expenses;
- the corporation must have incurred the exploration expenses before applying for the incentives program;
- the MEDA grants could be retained by the company or flowed through to the investor.

The Canadian Exploration Incentive Program was terminated in 1990.

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[84] Millie Goodman and Deborah L. Ort, *Tax Memo No. 75*, Canadian Tax Foundation, March 1989, pp. 8 and 18.

2. Federal Policy Initiatives North of 60 [1]

Introduction

The 1985-89 period saw a number of federal policy initiatives with significant implications for the mineral resource industry in the territories, including a new Aboriginal land claims policy, the first northern mineral policy, and a northern political and economic framework. The latter initiative was designed to support the transfer of all remaining provincial-type program responsibilities, including the management of natural resources, from DIAND to the territorial governments.

A New Land Claims Mandate

After years of prolonged negotiations in dealing with Aboriginal land claims, the federal government appointed a task force in 1984 to review the comprehensive claims process. The task force submitted its report, "Living Treaties: Lasting Agreements," in December 1985. The recommendations contained in the report suggested that fundamental changes to the twelve-year-old claims policy were in order.[2]

The federal government responded to the task force recommendations in 1986 with a new approach to the negotiation of comprehensive land claims. Although this approach fell short of the philosophical intentions of the task force report, it did improve the range of benefits offered to Aboriginal people. For example, changes were made regarding the need to extinguish all Aboriginal rights. Under the new policy, only land rights and not the right to Aboriginal language and other cultural rights would need to be relinquished. Even within the category of land rights, the policy was refined to eliminate the need for total or "blanket" extinguishment; specific areas could be ceded to the government without prejudice to land rights in other areas. For the first time, the new land claims policy also acknowledged the relationship between land claims and some aspects of self-government; specifically, it indicated a willingness to negotiate Aboriginal participation in the decision-making bodies which would regulate most of the northern lands.

On the issue of subsurface rights and resource revenue sharing, the policy allowed that, in some cases, these rights could be provided through the claims settlements:

> Granting subsurface rights close to communities, or in critical wildlife habitat areas, would serve as a way to avoid land use conflict in key areas. Such subsurface rights may also, in appropriate circumstances, provide beneficiaries with the opportunity and incentive to participate in, and benefit from, resource development.[3]

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[1] The federal government acts much as provincial government in respect of the two northern territories. The principal administrative delivery agency for these activities is the Department of Indian Affairs and Northern Development (DIAND).

[2] Department of Indian Affairs and Northern Development, *Living Treaties: Lasting Agreements*, Report of the Task Force to Review Comprehensive Claims Policy, 1985, p. iv.

[3] Department of Indian Affairs and Northern Development, *Comprehensive Land Claims Policy*, 1986, p. 13.

The federal government also indicated that it was prepared to share with Aboriginal groups a percentage of the royalties derived from the extraction of resources within the settlement area, although limitations could be placed on duration or the amounts involved.

As the negotiating process for reaching claims agreements slowly continued, the mineral industry became increasingly frustrated with the uncertainty and delays resulting from the unresolved state of the claims, which were a major disincentive to exploration in the region. At a 1986 National Symposium on the North, industry participants insisted that their objective was simply to establish a clear understanding of the regulatory, management, and fiscal regimes. They were prepared to cooperate with Aboriginal people under any new system, as long as its distribution of economic rent was fair and regulations did not become more complex. The sentiment with regard to industry-government relations was that "industry has no vested interest in seeing land regimes in the North identical to those in the South."[4]

The Northern Mineral Policy

The 1986 land claims policy was followed in the same year by the release of the first Northern Mineral Policy, which defined the federal government's position on regulation and land access for the northern mineral industry. As a product of extensive consultation with the mineral industry, the territorial governments and Aboriginal groups, the new policy represented the first attempt by the federal government to create a coherent framework within which the federal and territorial governments could "facilitate private-sector mineral exploration and development."[5]

While the new policy offered no financial support for mining activities, it was unequivocal in its promotion of the northern mineral industry. The policy recognized the limited opportunity for wage employment in the territories, as well as the major contribution of mining to alleviate high northern unemployment. The underlying premise was that social development in the North depends upon a healthy economic environment which, in turn, depends upon a healthy resource development industry. To accomplish this goal, the initial objective of the policy was to re-establish certainty and stability for the industry. It proposed to achieve this by addressing a number of key areas, including mining legislation, access to land, and program transfers to the territorial governments.

Mining Legislation. In the Northwest Territories, DIAND proposed replacing the general enabling legislation regarding mining regulation (the Territorial Lands Act and the Public Lands Grants Act) with a new Northwest Territories Mining Act. In Yukon, DIAND proposed a review of both the Yukon Quartz Mining Act and the Yukon Placer Mining Act to improve the process of mineral rights acquisition and retention. Regulatory standards regarding practices such as mine site rehabilitation and environmental protection would also be included.

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[4] Canadian Arctic Resources Committee, *Changing Times, Challenging Agendas*, 1988, p. 19.

[5] Department of Indian Affairs and Northern Development, *The Northern Mineral Policy*, 1986, p. 3.

Canada Mining Regulations. These Regulations are the federal instruments for establishing mining law in the territories. Amendments introduced on 17 December 1987 were aimed at improving the efficiency of northern mineral development. Changes to the federal statute followed consultation between the federal and territorial governments and the N.W.T. Chamber of Mines. Some of the changes included the following:

- removal of the Canadian ownership requirements for 21-year mining leases, to encourage foreign investment;
- elimination of the requirement for approval by the Governor in Council for the export of minerals;
- allowing transfer of claims subject to existing liens;
- removal of the requirements for drilling, trenching, or other physical work as a prerequisite for leasing;
- simplification of staking procedures;
- removal of the Public Lands Act as a statutory authority.[6]

Access to Land. By 1986, 16.5 percent of Yukon and approximately 6.1 percent of the combined land area of Yukon and the Northwest Territories had been withdrawn from staking, to create national parks and conservation reserves for non-mining industrial users and for land claims identification. This had occurred through a process of incremental expansion which had gradually eroded industry confidence over future access for mineral exploration and development. Recognizing the need for long-term certainty over access to land in order to ensure future exploration, the federal government proposed to concentrate its efforts on providing certainty in three areas: native land claims, conservation initiatives, and northern land use planning.

In the area of native land claims, the policy stated that there would be "no unilateral ban on mineral staking activities outside of those areas already set aside as part of the land claims process." Furthermore, "properly registered claims in lands subsequently withdrawn as part of the land claims process will remain valid even if ownership of the land is transferred."[7]

Regarding land withdrawn for conservation purposes, it was proposed that the boundaries of two bird sanctuaries, which had been established with large buffer zones, be reviewed to determine whether the land withdrawn exceeded the conservation needs. The land-use policy of the Thelon Game Sanctuary was also to be reviewed for possible multiple-use designation.

The previous policy of public and private consultation regarding the creation of new national parks was maintained. Where possible, however, land withdrawals under the new policy would be limited to five percent or less of the land mass in any one province or territory.

Program Transfers. The devolution of provincial-type programs from the federal government to the territories was to continue. Responsibility for mine safety had already been transferred to the Government of the Northwest Territories. Other responsibilities of a provincial nature were to follow on the request of the territorial governments.

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[6] N.W.T. Chamber of Mines, *Northwest Territories Mining Issues*, Vol. 1, No. 1, February/March 1988.

[7] Department of Indian Affairs and Northern Development, *The Northern Mineral Policy*, 1986, p. 13.

The second goal of the new policy was to enhance the competitive position of the northern mineral industry in global markets. Improvements were proposed in a number of areas, including mining royalties and regulatory systems, geoscience, and exploration. Although the principles underlying the royalties would not be changed, the policy stated that minor amendments would be made to improve and modernize the legislation and royalty regimes.

The policy on environmental controls represented a relatively new approach to environmental regulation for the mineral industry. The government recognized that the existing system presented problems of uncertainty, duplication and costly project delays, and recommended that regulatory bodies be more responsive to the industry's requirements.

The industry's initial response to the policy was favourable. The N.W.T. Chamber of Mines suggested that particular attention should be paid to the following implementation tasks:

- completing the amendments to the Canada Mining Regulations;
- establishing and maintaining communication linkages;
- clarifying the status of northern land withdrawals;
- confirming that the Northern Land Use Planning Process was in place for purposes of gathering information for policy-making, not to partition land into single-use zones;
- fostering the competitiveness of northern mining through federal assistance.[8]

The federal government's statements concerning the political evolution of the northern territories contained within the northern mineral policy were confirmed in 1987 with the approval of a policy framework to guide federal activities over the political and economic evolution of the North.

A Northern Political and Economic Policy Framework

In 1986, DIAND decided that the pressures of northern demands to settle land claims, divide the Northwest Territories, establish a clear agenda on the future devolution of federal responsibilities, and strengthen the northern economic environment, had created the need for a clear policy direction regarding the future development of the Northwest Territories and Yukon. In June 1987, the federal government approved a political and economic framework for the North. The framework was based on the fundamental goal of strengthening the political and economic institutions in the Northwest Territories and Yukon through the following objectives:

- early settlement of land claims;
- transfer to the territories of provincial-type responsibilities still held by the federal government, including responsibility for managing the North's natural resources;
- development of sound and stable economies in the North by working with the territorial governments to encourage economic diversification;

[8] N.W.T. Chamber of Mines, "Notice of Meeting," 27 February 1987.

- improvement of the business climate for investors and entrepreneurs through joint federal-territorial implementation of the Northern Mineral Policy and development of a Northern Oil and Gas Accord; and
- affirmation of Arctic sovereignty.[9]

By 1989, a number of programs and responsibilities had been devolved, or were in the process of transfer, to the territorial level. Jurisdictional control and ownership over the federal Northern Canada Power Commission (NCPC), for example, was shifted to the Yukon and Northwest Territories in 1987 and 1988 respectively. In transferring the utility to the Northwest Territories, the federal Minister of Indian Affairs and Northern Development stated that "the sale of NCPC to the territorial government is an important element of the government's goals to develop Northern institutions by transferring provincial-type responsibilities to the territorial governments."[10]

A prominent feature of the vision presented by the policy initiatives of the 1985-89 period is the diminished role of the federal government north of the 60th parallel. Through increasing devolution of programs to the territorial governments and greater Aboriginal participation in the ownership and management of northern resources, the mining industry of the 1990s will increasingly be dealing with Aboriginal peoples and northern governments in the process of conducting its business.

[9] Department of Indian Affairs and Northern Development, *A Northern Political and Economic Framework*, Ottawa, 1988.

[10] Department of Indian Affairs and Northern Development, *Communiqué*, 1-8816, Ottawa, 9 May 1988.

3. Yukon

Introduction

Industry Trends

> The Yukon mining industry comprises three different activities: mineral exploration, hardrock mining and placer mining. In 1989, the value of mineral production was $540 million. Of this amount, $333 million was accounted for by zinc production, followed by lead at $98 million. The third most important commodity was gold at $82 million.[1]

While Yukon mineral activity remained modest in 1985 and 1986, by 1987 the territory's mining industry had reason for optimism: the value of mineral production in that year was more than double the previous year's level. Higher metal prices and increased production of gold, silver, lead and zinc all contributed to the improved fortunes of the industry. Placer mining by year-end had the highest recorded production (4,130,450 grams) since 1917. Mineral exploration expenditures of $34 million were primarily concentrated in gold. Flow-through financing accounted for 81 percent of total exploration investment.[2]

Mining had a fairly healthy year in 1988 as well. Employment levels improved, with 160 new mining jobs becoming available. Placer production rose again, above the 1987 level. Exploration and development expenditures remained high, with activity directed at well-advanced projects. Production was dominated by the output of Curragh Resources' lead/zinc mine. Mount Skukum and the United Keno Hill Mine did not fare as well, ultimately shutting down.[3]

Exploration expenditures dropped dramatically in 1989, to $18 million (in contrast to the $45 million spent in 1988). The decline was attributed largely to changes in the federal flow-through share program for exploration assistance. This change, as well as the increasing demands of environmental and Aboriginal groups concerning land use, the remaining shock waves of the 1987 stock market crash, and low metal prices, all contributed to a climate of uncertainty over the economic outlook for Yukon as the next decade approached.

Highlights of Government Initiatives

Mineral policy and program activities for the 1985-89 period in Yukon began with a major assistance package in the form of a four-year Canada/Yukon Subsidiary Agreement on Mineral Resources signed on 19 May 1985. The purpose of the agreement was to create a financing and delivery framework for the implementation of projects and programs designed to increase mining

[1] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989.*

[2] "Yukon: Mineral Production Increases," *Mining Review*, May/June 1988, pp. 17-18.

[3] "Yukon," *Mining Review*, May/June 1989, pp. 15-19. See also, "Changing Fortune," *Mining Review*, p. 11.

opportunities for Yukoners and promote the recovery of the region's mining sector.[4]

In 1986, the territorial government initiated "Yukon 2000," a strategy to examine the current and future development of the Yukon economy and its traditionally dominant component, mining. Following a year-long consultation with Yukoners, the government released a document entitled *The Things That Matter* in 1987. This report identified and discussed some of the issues contributing to the difficulties faced by mining, such as land access, placer mining regulations, transportation and energy costs, and investor confidence.[5]

The devolution of federal programs during this period included the agreement to transfer the Yukon's portion of the assets of the Northern Canada Power Commission from the federal to the territorial government by 31 March 1987. One of the goals of the new Crown corporation, Yukon Development Corporation, was to help stimulate the territorial economy.[6]

A Yukon/Northwest Territories transboundary agreement (signed 10 October 1986) signalled the beginning of a formal five-year arrangement dealing with mutual concerns (such as the Canada Tungsten Mine) about resource development and management along the border.[7]

Mineral-Related Task Forces and Studies

Placer Mining Data Development Project. A 1985 feasibility study entitled "Yukon Placer Mining Data Base Study" indicated the need to have an independent agency collect technical information on the placer industry on an ongoing basis. The first phase of the resulting Placer Mining Data Development Project was completed after consultation with the placer industry and the federal government, under the direction of a ten-member steering committee.

Yukon Economic Strategy. In 1986, as part of its economic development strategy, the Yukon government identified ways to support the mineral industry:

- providing incentives for exploration and development;
- enhancing the investment climate for the industry;
- streamlining and improving the fairness of the assessment and regulation process;
- settling land claims; and
- increasing territorial control of resources.

The Yukon government agreed to continue to consult with the industry concerning long-term development, as further programs and responsibilities relating to the mining sector devolve from the federal to the territorial level. In order to meet these principles, the Yukon government intended to work with the federal government and industry through the Yukon Placer Implementation Review Committee, which was established to develop regulations that are acceptable to placer miners and that provide reasonable protection for fisheries. It also planned to hold annual meetings of Yukon government ministers and the industry to discuss mining issues.

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[4] Canada/Yukon Subsidiary Agreement on Mining Industry Recovery, 1986.

[5] Yukon, *The Things That Matter*, September 1987.

[6] Yukon, *Annual Report 1986/87*, p. 4.

[7] Yukon, "News Release," 17 October 1986.

The new strategy also promised continued support to several existing programs designed to foster growth and diversity in the mineral industry, including the *Prospectors Assistance Program*, the *Exploration Incentives Program*, the *Resource Transportation Access Program*, and *Economic Development Agreements*.

Assistance Initiatives

Direct Assistance/Grants and Subsidies

In 1985 the Yukon government introduced enabling legislation related to the reopening of the former Cyprus Anvil Mine at Faro. A loan agreement was signed between the new owner of the mine, Curragh Resources Corporation, and the governments of Canada and Yukon. Under the agreement, the governments guaranteed 85 percent of a $15-million line of credit granted by Curragh's bank. The mine was expected to create 400 direct and 700 indirect jobs. Lead and zinc concentrate production was to begin in mid-1986. Curragh Resources also received $3 million of federal funds under the *Mining Industry Recovery Sub-Agreement* of the Canada/Yukon Economic Development Agreement.[8]

Yukon Energy Alternatives Program. In October 1986, Whitehorse Coal Corporation received a $75,000 territorial grant under the Yukon Energy Alternatives Program. The corporation was expected to produce 2,000 tonnes of coal for customer trials and test work, undertake a marketing study, and prepare a detailed operating plan.[9]

The Northern Analytical Assay Lab. During the summer of 1989 a new assay lab was opened in Whitehorse, significantly reducing the wait for assay results. The lab was completed with assistance of $96,250 under the Canada/Yukon Small Business Incentive Sub-Agreement.[10]

Mineral Exploration Incentives Program (MEIP). Announced early in 1986 by the Yukon government, MEIP was designed in consultation with the Yukon Chamber of Mines to help prospectors and junior mining companies. The program was aimed at individuals, partnerships and junior companies who were unable to write off exploration costs because they lacked taxable income from mineral production in Canada. Financial assistance included a rebate of 25 percent of eligible expenses for approved exploration programs, up to $50,000 per project per year (to a maximum of $100,000 per property).[11] In 1989, with a budget of $736,000, the program approved 24 applications.

Prospectors Assistance Program (PAP). Initiated in 1986 to complement the Mineral Exploration Incentives Program, PAP was designed to provide financial aid under certain circumstances. Novice prospectors, for example, were required to work under the supervision of a prospector certified by the board. Documentation with detailed notes and maps of work was required and a minimum of 60 days was to be spent actively prospecting in the field.[12]

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[8] Canada/Yukon, *EDA Update*, October 1986, pp. 6-7, 12.

[9] Yukon, "News Release," October 1986.

[10] Canada/Yukon, "New land cuts wait for assay results," *EDA Update*, No. 6, September 1989.

[11] Yukon, "News Release," 4 February 1986.

[12] Yukon, "News Release," 14 February 1986.

Prospectors could receive a contribution of up to $5,500 to help offset their expenses.[13]

In 1988, PAP received $150,000, while another $150,000 was allocated for exploration incentives.[14] Thirty-three prospectors received a total of $134,000, and an additional $1 million was spent under the MEIP.[15] The program funded 37 applications in 1989 from a budget of $140,000. By the fall, program managers requested further funding to meet all the applications of merit.[16]

Mineral Development Agreements

Mineral Resources Subsidiary Agreement. The main assistance program offered by the federal and Yukon governments during 1985-1989 was the $3.9 million Mineral Resources Subsidiary Agreement under the Canada/Yukon Economic Development Agreement. The federal government provided 70 percent of the funding and Yukon provided the remainder. The agreement had three components: the $2.2 million Geochemical Survey Program, the $600,000 Placer Research Program, and the $1.1 million Geological Mapping Program.[17]

Mining Industry Recovery Sub-Agreement. As noted above, an additional $3-million, federally funded assistance package was also negotiated for Curragh Resources under the Canada/Yukon Economic Development Agreement.[18]

Mineral Resources Program. In 1989, a new one-year Mineral Resources Program was signed in order to extend the previous MDA, which expired on 31 March 1989. The program emphasized geological mapping, rock dating, mineral inventory, geochemical surveys and other related projects.[19] Fourteen projects and a budget of $921,300 were approved under the new program.

Infrastructure Assistance

The Yukon Economic Strategy outlined the following infrastructure objectives:

- improvements to the trunk road network;
- involving the mining industry in the setting of priorities for implementing transportation projects;
- resource access roads, with priority given to those that are available for multiple use;
- using energy as a tool for economic development, and providing fair and equitable rates for the mining industry, as well as other consumers.

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[13] Yukon, "News Release," 28 November 1986.

[14] "Mining Matters," *Mining Review*, July/August 1988, p. 13.

[15] "Changing Fortunes," *Mining Review*, July/August 1989, p. 17.

[16] Yukon Chamber of Mines, "The Yukon Claim Sheet," Vol. 5, No. 10, 5 October 1989.

[17] Canada/Yukon, *EDA Update*, January 1986, pp. 4-5.

[18] Canada/Yukon, *EDA Update*, October 1986.

[19] Yukon Chamber of Mines, "The Yukon Claim Sheet," Vol. 5, No. 10, 5 October 1989.

Skagway Road. A specific initiative which resulted from the above economic strategy was the 1986 agreement for year-round operation and maintenance of the Skagway Road. Anticipated benefits included mine haul and spin-off activity. The road facilitates shipment of concentrate from Curragh's Faro Mine to the coast at Skagway, Alaska.

Regional Resource Roads Program. The Yukon government's $2.5 million resource roads program funded several access roads for the mining industry during the 1986-89 period. The program was established to provide access into areas with high economic development potential. Although there were some large contributions, funds allocated for individual projects generally ranged between $10,000 and $25,000.[20] In addition, the Yukon government offered up to 100 percent funding for tote roads, the proportion depending on other usage.

Resource Transportation Access Program. The *Regional Resource Roads Program* was renamed the Resource Transportation Access Program in 1988 and continued into 1989 to help promote economic development. By the fall of 1988, $298,850 had been allocated to eleven mining-related road projects. The mineral industry in particular benefited from infrastructure support worth $1.2 million.[21]

Northern Canada Power Commission (NCPC). As one of a number of steps taken to increase territorial responsibilities, the federal government transferred jurisdiction over the Yukon assets of the NCPC to the Yukon Territory in 1987.[22] The Yukon government placed ownership and control of the assets of the utility with the Yukon Development Corporation.[23] Basic elements of the agreement included the following:

- the financial value of NCPC's Yukon assets was set at $95 million as of 31 March 1987;
- Yukon assumed $39 million equity in NCPC, consisting of a $19.5-million cash investment by the territory and $19.5 million in equity from the federal government – provided through conversion of debt to equity;
- the remaining debt of $56 million consisted of bonds to be held by the federal government. Of this, $16 million was in the form of a fixed-rate bond and the remaining $40 million was a flexible bond for which the interest and principal payment varies with the sales of power in any given year.[24]

Yukon residents were to assume full control of the assets and operations of the utility and it was promised that power rates to Yukon consumers would not be raised for two years. All Yukon-based employees of the utility were assured of their jobs after the transfer of control, which occurred on 31 March 1987.[25]

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[20] Yukon, "News Release," 21 July 1987. See also, 30 July 1987.

[21] "Changing Fortunes," *Mining Review*, July/August 1989, p. 17.

[22] Department of Indian Affairs and Northern Development, "Statement by the Honourable Bill McKnight, Minister of Indian Affairs and Northern Development on the Northern Canada Power Commission Transfer Agreement," Whitehorse, Yukon, 5 February 1987.

[23] For further information on the transfer of NCPC assets to the Yukon Government, see "Statement by the Honourable Tony Penikett on NCPC Transfer," 5 February 1987.

[24] Department of Indian Affairs and Northern Development, "Statement by The Honourable Bill McKnight on the Northern Canada Power Transfer Agreement," Whitehorse, Yukon, 5 February 1987.

[25] Department of Indian Affairs and Northern Development, "Notes for Remarks by the Honourable Bill McKnight on Second Reading of Bill C-45," Ottawa, Ontario, 25 March 1987.

Human Resources Assistance

Representatives from the mining industry and from Yukon College met in 1989 to discuss recommendations for setting up a mineral industry training program in four areas: exploration technician, underground miner, placer mining and mill operator.[26]

Regulation of the Mineral Industry

Land Access and Tenure

Council for Yukon Indians (CYI) Land Claim. An Agreement-in-Principle (AIP) on the CYI land claim was ratified by the federal government in March 1989. Under the terms of this agreement, Yukon Aboriginals became entitled to approximately 8.6 percent (41,440 square kilometers) of Yukon land. Subsurface rights have been granted to 25,600 square kilometers of the total allotment. The AIP also provided $248 million (1990 dollars) in cash compensation and guaranteed Yukon First Nations representation on many of the land and resource regulatory boards to be established under the final land claims agreements.[27]

The Umbrella Final Agreement was reached in March 1990, establishing the basis of negotiation for each of the 14 individual Yukon First Nations final agreements.

Environmental Regulation

Dangerous Goods Transportation Act. The territorial government proclaimed a Dangerous Goods Transportation Act on 17 July 1986, to harmonize with the federal legislation. The classification of dangerous products, along with safety standards, training requirements, and regulations for the packaging, labelling and documentation of such products are listed under the legislation.[28]

Health and Safety Regulation

Mine Safety Administration. Discussions on the transfer of mine safety responsibilities from DIAND to the Yukon Department of Justice, Corporate and Labour Affairs Branch were underway in the summer of 1987. The transferred responsibilities were to include mine-site safety inspections, ensuring the maintenance of effective mine rescue capability, and undertaking the certification of all blasters in the Yukon. Also discussed was the transfer of personnel, fixed assets and financial resources. The transfer took place in April of 1988 as part of the larger process of transferring federal responsibilities to territorial jurisdiction.[29]

[26] Yukon Chamber of Mines, "The Yukon Claim Sheet," Vol. 5, No. 7, 6 July 1989.

[27] Yukon, *Annual Report 1988-89*, p. 7. See also, Yukon Chamber of Mines, "Notes on the Framework Agreement for the Yukon Indian Land Claim," December 1988, p. 1; and Department of Indian Affairs and Northern Development, "Information," Sheet No. 9, February 1992.

[28] Yukon, "News Release," 18 July 1986.

[29] Yukon, "News Release," 21 July 1987.

Workers' Compensation

The Yukon Workers' Compensation Board was established in 1972. Its compensation fund has consistently been the best funded in Canada, with assessments amounting to more than 200 percent of payments from 1982 to 1987. Changes to the *Workers' Compensation Act* were introduced in December 1986, including the indexation of compensation benefits. The Act was amended again in 1987, with measures placing greater demands on the fund: monthly pensions for surviving spouses now continue for life, rather than until remarriage, and the age limit for dependents was raised from 16 to 18 years, or from 18 to 21 for those in post-secondary education.

Trade Initiatives

International Trade

Yukon Government Leader Tony Penikett visited Japan and Korea in 1985 to observe and participate in meetings between Curragh Resources and Japanese and Korean smelting companies, regarding lead-zinc sales contracts for Curragh's (formerly Cyprus Anvil) mine near Faro. Penikett also met with the Alberta government's representative for Japan/Korea, to discuss an offer made by Alberta to allow Yukon to use Alberta's facilities for the promotion of Yukon tourism and economic development initiatives. In 1987, Penikett visited Norway and Sweden on behalf of Curragh and to promote other economic development opportunities.[30]

The Canada/U.S. Free Trade Agreement was thought to be a "mixed blessing" for the Yukon, according to an analysis released by the Yukon Economic Development Minister in 1988. Under the FTA, regional development incentive programs such as the Yukon/Curragh mine agreement could be viewed as unfair subsidies. At the same time, the Yukon mining industry was not expected to benefit significantly from increased access to U.S. markets under the Free Trade Agreement, as it had faced few restrictions previously.[31]

[30] Yukon, "News Release," 5 June 1987.

[31] Yukon, "News Release," 2 March 1988.

4. Northwest Territories

Introduction

Industry Trends

> The mineral industry in the Northwest Territories accounts for a major portion of the territorial economy (75 percent of the Gross Territorial Product in 1988). Almost one-quarter of Canada's lead and zinc production originates in the territory, which also produces gold, cadmium and silver. In 1988-89 approximately 2,000 people – 6 percent of the total available N.W.T. labour force (over 15 years of age) – were directly employed in producing mines.[1]

Persistently low metal prices and consequent cutbacks and closures at a number of mines led to below-capacity production for the Northwest Territories in 1985, although exploration expenditures were slightly higher than the previous year. In 1986, 400 mining jobs were lost as a result of the depressed state of world base metal markets. With the closing of both the Pine Point and Salmita mines in 1987, the employment situation worsened.[2] Entering 1989, the Northwest Territories had six producing mines (primarily gold, zinc and lead) accounting for about 10 percent of total employment.[3] The mineral industry was showing some promise, with increased exploration activity (partly due to the federal flow-through share scheme) and indications of significant deposits of precious metals.[4] By year-end, however, exploration and development expenditures had decreased by 25 percent over 1988 levels.[5] The slowdown was a result of several factors, such as rising interest rates, changes to the flow-through financing program, lack of enthusiasm for the new Canadian Exploration Incentives Program, fall-out from the 1987 stock market collapse, and the unsettled state of Aboriginal land claims.[6] Production for the year was estimated to be only slightly higher than in 1988.[7]

Highlights of Government Initiatives

The federal and territorial governments each established Action Forces in early September 1986 in order to respond to the general decline of the N.W.T. economy, not only in the mining sector but also in fur prices and oil and gas exploration. The federal Action Force on Arctic Initiatives and the Northwest Territories' Action Force on Economic Development worked together on a number of issues related to the strengthening and diversification of the territorial economy.

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[1] Outcrop Ltd., *Northwest Territories Data Book 1990/91*, p. 86.

[2] Northwest Territories, *1987-88 Budget Address*, February 1987.

[3] Northwest Territories, *1989-90 Budget Address*, February 1989, p. 29.

[4] *Ibid*, p. 2.

[5] Northwest Territories, *1989 Annual Report*, 1990.

[6] "Changing Fortunes," *Mining Review*, July/August 1989, p. 11.

[7] "N.W.T. Mineral Production," *Mining Review*, May/June 1990, pp. 25-26.

One of the resulting N.W.T. initiatives was the establishment of the Committee on Northern Economic Policy, to work with the federal government on formulating a northern development strategy. Among the initiatives funded by the federal government was the Nanisivik runway rehabilitation project, for which $800,000 was allotted for work to be completed in 1987.[8]

A Mineral Development Sub-Agreement was one component of the new Canada/N.W.T. Economic Development Agreement which was reached in July 1987. Under the terms of the agreement, three programs – geoscience, technology and mining information – received funding assistance.

In 1987, the federal government responded to the worsening economic condition in both territories by approving a policy initiative entitled the Northern Political and Economic Framework, which emphasized the commitment to work toward responsible and independent government in the North.

The Northern Accord, designed to promote the "orderly development of oil and gas resources" for Canada and the Northwest Territories, was introduced in 1988. The implications of this agreement extended far beyond oil and gas concerns: the goal was to increase the economic self-sufficiency of the Northwest Territories through control over its own natural resources.[9] In response to the Northern Accord enabling agreement (signed September 1988) and to its growing responsibilities for mineral development, the territorial government restructured the Energy, Mines and Resources Secretariat, renaming it the Department of Energy, Mines and Petroleum Resources. Two other new departments were created: the Department of Safety and Public Services, and the Department of Transportation.[10]

Assistance Initiatives

The Mineral Development Agreement (MDA)

In 1986, the Government of the Northwest Territories and the federal government, with input from the N.W.T. Chamber of Mines, completed negotiations for an MDA as a subsidiary agreement of the Canada/N.W.T. Economic Development Agreement.[11] The agreement was signed in 1987. The $7-million MDA program was funded by the N.W.T. government (30 percent) and by the federal government (70 percent) and scheduled to run until March 1991.

The purpose of the MDA was to strengthen the mineral industry in the Northwest Territories, principally through improved information-gathering capabilities. The agreement consisted of three programs: Geoscience, Northern Technology Assistance Program, and Northern Mining Information Program.

Geoscience. The geoscience program was created to assist and encourage mineral exploration in the Northwest Territories. The program focused on favourable areas of mineral potential for which maps and reports were prepared for use by the mineral industry. Total funding for this program was $5.7 million over the four-year life of the agreement.

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[8] Canada/N.W.T., "News Release," 1-8652, 4 December 1986.

[9] Department of Indian Affairs and Northern Development, "Information: Backgrounder – 'Framework for a Northern Accord,'" September 1988.

[10] Northwest Territories, *1989-90 Budget Address*, p. 3 and p. 10.

[11] N.W.T. Chamber of Mines, "Report to Meeting of Joint Provincial Mining Associations, Chambers of Mines and Allied National Bodies," Banff, Alberta, 15 September 1986.

Northern Technology Assistance Program (NTAP). Under NTAP, private-sector individuals, mining companies, and industry organizations were eligible to receive assistance to develop new technologies for upgrading mining and processing operations in the Northwest Territories. Support was primarily directed at technologies designed to overcome the unique problems associated with mining in the north, such as the fragile environment, restricted water access, high energy costs, and permafrost. Financial assistance offered from this component of the MDA was $1 million over the four-year span of the agreement. Assistance was available for up to 75 percent of a project's eligible cost, to a maximum of $150,000. Eligible costs were to be determined by the Management Group on a project-by-project basis.[12]

Projects conducted in 1989 under the MDA included a pillar recovery project (Nanisivik Mine), a gold recovery project (Giant Mine), a project investigating improved blasting methods (Lupin Mine) and a tailings recovery project to reduce environmental damage (Nerco-Con Mine).[13]

Northern Mining Information Program (NMIP). The $300,000 NMIP was designed to promote a greater awareness among the public of the Northwest Territories regarding the economic importance of the territorial mining industry. Assistance was directed towards information and education programs which provided northern residents with a better understanding of the role of mining in their economy and the employment opportunities available throughout the industry.[14]

Infrastructure Assistance

Northern Canada Power Commission (NCPC). The Federal government's commitment to the ongoing transfer of provincial-type responsibilities to the territorial governments was reinforced in 1985 with signing of a memorandum of understanding concerning the sale and transfer of the N.W.T. assets of NCPC to the territorial government. Preparation for the transfer continued through 1986-87 with the Legislative Assembly of the Northwest Territories passing the N.W.T. Energy Corporation Act as a legislative base for the transition. Following the transfer, regulation of the utility became the responsibility of the Public Utilities Board.[15]

In May 1988, the Government of the Northwest Territories (GNWT) purchased NCPC (for $50 million), renaming it the *Northwest Territories Power Corporation*. The sale marked the end of the federal government's responsibility for operation of the utility, including all electrical subsidy programs. Administration of the utility, including rate setting, became a responsibility of the GNWT.

The transfer of the utility and the probability of a resulting increase in electrical costs was a significant issue for the territorial mining industry. As a major rate-payer, the mining industry expressed hope that the transfer of the utility would not impair the financial and technical resources required to meet expanding northern industrial needs.[16]

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[12] Canada-Territories Economic Development Agreement, 1987.

[13] Northwest Territories, *1989 Annual Report*, p. 70.

[14] Canada-Territories Economic Development Agreement, 1987.

[15] Northwest Territories, *Annual Report*, 1986, p. 13.

[16] N.W.T. Chamber of Mines, *Northwest Territories Mining Issues*, Vol. 1, No. 1, February/March 1988.

Department of Transportation. In an effort to promote long-term development of the territory's economy, the territorial government set up a $25-million fund in 1989 for transportation infrastructure. A new Department of Transportation was established, replacing programs formerly housed in the Departments of Public Works and Highways, Government Services, and Municipal and Community Affairs. The new department embarked on developing a comprehensive transportation strategy.[17]

Regulation of the Mineral Industry

Land Access and Tenure

Land Use Planning Program. In 1988, the federal government and the GNWT established the N.W.T. Land Use Planning Program, which institutes a process of consultation and cooperation between government, native organizations, communities and industry. The intent of the program was to provide a systematic process of decision-making with regard to the management of land and resources, with an emphasis on community-based planning.

The N.W.T. mining industry acknowledged the land-use planning process and participated actively in the development of the Lancaster Sound Land Use Plan. The industry did not want the process to become an impediment to the mineral development process, preferring to see it used as an information-gathering exercise.[18] The plans, which identify local land uses, are meant to serve as guides for development and are not linked to the environmental review process.

Environmental Regulation

Environmental Review. The proposed Kiggavik uranium project near Baker Lake received a great deal of public scrutiny. A fund of $40,000 from the territorial government and $160,000 from DIAND was established to allow public participation in a review conducted by the Federal Environmental Assessment Review Office (FEARO) of the application from Urangesellschaft Canada Ltd. to develop the mine.[19] More funding was subsequently arranged by FEARO, after complaints that the amount was insufficient.[20] In July 1990, the principal owner and operator of the Kiggavik project (Urangesellschaft) requested an indefinite delay of the Environmental Assessment and Review Process. (See 1990 *Mineral Policy Update*.)

Health and Safety Regulation

Department of Safety and Public Services. This Department was created in 1989 with responsibility for safety in society and in the workplace. Safety, Mines Inspection, Consumer Services, Fire Safety and Labour Services were all transferred to the new department.[21] Following a review of the existing mine safety training program, a training/mining inspector was designated to assess and monitor training in mines, and the safety regulations were completely revised.[22]

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[17] Northwest Territories, *1989-90 Budget Address*, p. 6. See also, Northwest Territories, *1989 Annual Report*, 1990.

[18] N.W.T. Chamber of Mines, *Northwest Territories Mining Issues*, Vol. 1, No. 1, February/March 1988.

[19] "FEARO review sets aside $2,000,000," *News/North*, 3 January 1989.

[20] "Labour federation calls for surtax on mine profits," *News/North*, 4 July 1989.

[21] Northwest Territories, *1989-90 Budget Address*, p. 10.

[22] "Unenforced laws hurts mine safety," *News/North*, 17 July 1989; and Northwest Territories, *1989 Annual Report*, p. 38.

Workers' Compensation. The Workers' Compensation system in the Northwest Territories was first established in 1976. Major changes were made in 1987, when the merit rebate program was abandoned, and rates were reduced by 25 percent on average. The base for benefits was changed from 75 percent of gross earnings to 90 percent of net earnings. The 1987 legislation did not index pensions to changes in prices.

Taxation Matters Affecting the Industry

General Taxation

The 1985 and 1986 GNWT budgets contained no major tax changes of consequence to the mining industry. In the 1987 budget, no tax increases were announced despite an anticipated budgetary deficit. This decision was intended to prop up the territory's troubled economy, and to attract capital for resource investment. At the time, the Northwest Territories had no sales tax or corporate capital tax, as well as relatively low personal income, fuel and corporation tax rates.[23]

Although the February 1988 budget contained no major tax changes, the government announced at this time that a discussion paper concerning future changes to the tax system was being prepared.

The 1989-90 budget projected a $11.4 million deficit, most of which was to be covered by accumulated surplus rather than by tax increases; $25 million was allocated towards improving infrastructure including roads, airports and marine facilities. A further $52 million was to be spent on economic development for the territory.

After the 1988 re-assessment of property values, the GNWT set 1989 property tax rates at $12 per thousand for mines and for oil and gas properties.[24]

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[23] Northwest Territories, *1987-88 Budget Address*, pp. 22-23.

[24] Northwest Territories, *1989-90 Budget Address*, p. 14.

5. British Columbia

Introduction

Industry Trends

> Mineral products constitute over one-fifth of the province's total exports. Coal and copper are British Columbia's most important minerals, followed by zinc, gold and silver. The mineral industry in British Columbia directly employs over 14,000 people. In 1989, the value of mineral production excluding petroleum and natural gas reached $3.4 billion, having remained fairly steady since 1985. Of that amount, coal and copper each accounted for $1 billion.[1]

B.C. mining, in a depressed state during the first half of the 1980s, showed some signs of recovery by the end of the decade. Industry representatives remained concerned, however, about the erosion of government assistance, the increase of regulation, high taxation rates, aging operations, depleting ore reserves, and the possible loss of exploration opportunities due to restricted permitting in proposed park, wilderness or land claims areas.

In 1985, cutbacks, temporary shutdowns and closures, resulted in approximately 1900 job losses although new jobs were created at the Westmin Resources H.W. zinc-copper mine (Myra Falls) and at the Noranda Bell copper mine and the Brenda Mines Ltd. copper/molybdenum mine.

The mineral industry continued to experience difficulties in 1986, although there was a notable increase in mineral exploration expenditures. This increase was largely attributed to the provincial government's Financial Assistance for Mineral Exploration program (FAME) and the federal government's flow-through financing program.[2] Gold stimulated considerable interest.

By 1987, after five years of losses, the B.C. mining industry was able to show an after-tax income of $167 million. The improvement was attributed to higher mineral prices (in particular, copper, silver and gold), increased sales volume and better operating efficiency.[3] The Highland Valley Copper Mine, owned by Lornex Mining Corporation Ltd. and Cominco Ltd., began operations, becoming Canada's largest metal mine and one of the world's largest copper mines.[4] Mineral exploration expenditures in the province reached record highs in 1987 and 1988.

By 1989, the B.C. mineral industry's annual gross sales reached an all-time high of $4 billion. Nevertheless, the industry was concerned about diminishing profit margins. Mineral exploration levels dropped from the record levels of 1987 and 1988 with the termination of flow-through financing, which had accounted for 63 percent of exploration expenditures in the previous couple of years.[5] Claim staking, however, increased significantly, particularly in the Stewart-Iskut River areas of northwestern British Columbia.

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[1] Energy, Mines and Resources Canada, "Canadian Mineral Industry: Monthly Report," January 1991, p. 12.

[2] "B.C. Mineral Production," *Mining Review*, May/June 1987, p. 13.

[3] Mining Association of British Columbia and Price Waterhouse Mining Specialist Group, *Mining in British Columbia 1987*, Vancouver and Toronto, p. 9.

[4] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1987*, p. 3.9.

[5] "B.C. Mineral Production," *Mining Review*, May/June 1989, p. 13.

Cominco Ltd., one of the world's largest producers of zinc and lead, decided in 1989 to cancel plans to expand its zinc refinery at Trail, citing high water taxes, transportation difficulties and projected domestic zinc mine closures. Water rental fees ($19 million in 1988, compared to $200,000 in 1980) were expected to more than double the cost of generating electrical power in Cominco-owned dams.[6]

The first annual Mining Week in British Columbia, co-sponsored by the Mining Association of British Columbia and the Mining Suppliers, Consultants and Contractors Association of British Columbia, was held in February 1989. The idea emerged out of the desire to create more public awareness of the importance of the mineral industry to "economic development and general well-being of all British Columbians."[7]

Highlights of Government Initiatives

Major mineral-related policies were initiated during the last half of the 1980s, including a five-year Canada/British Columbia Mineral Development Subsidiary Agreement (MDA), signed in July 1985.

Recognizing the need to revitalize the mineral industry, the provincial Minister of Energy, Mines and Petroleum Resources established a Mining Task Force in 1986, consisting of representatives from the Mining Association of British Columbia, The Coal Association of Canada, and the B.C. and Yukon Chamber of Mines. New provincial legislation during the period 1985-89 included the Mineral Tenure Act, a new Mines Act, the British Columbia Mining Code, and a new Mineral Tax Act. These and other initiatives are discussed below.

Mineral-Related Task Forces and Studies

Federal/Provincial Task Force on the Expanded Use in Ontario of Low-Sulphur Western Canadian Coal. British Columbia, the federal government, the other western coal-producing provinces and Ontario participated in a task force to examine ways to facilitate the sale of western coal to Ontario Hydro. An *Action Committee on Western Canadian Low-Sulphur Coal to Ontario* was established in March 1987.

Mineral Industry Task Force. In 1986, the British Columbia government established a task force to examine the state of the mining industry in the province. Other participants were the Mining Association of British Columbia, The Coal Association of Canada, and the B.C. & Yukon Chamber of Mines. The task force concluded in its 1987 report that mining would not continue to hold its position as British Columbia's second largest industry under existing taxation policies. Two billion dollars in taxes had been paid over the previous decade (mid-1970s to mid-1980s), representing 63 percent of the B.C. mining sector's total before-tax earnings. The industry, however, was facing difficulties: between 1982 and 1985 it had lost about $277 million, and expenditures on exploration had declined.[8] The task force predicted that by the mid-1990s, without some relief from taxes and other costs, more major mines would close,

[6] "Cominco Cancels Expansion Plans at Trail," *Mining in British Columbia*, Vol. 2, No. 7, July 1989, p. 102.

[7] Mining Association of British Columbia, *Mining in British Columbia 1990*, January/February 1990, Vol. 1, No. 1, p. 24.

[8] *Alberta Report*, 16 March 1987, p. 18. See also, *Mining Review*, March/April 1987, pp. 21-25.

unemployment rates would be very high, revenues to governments would be negligible, and the economic base of 28 B.C. communities would disappear.[9]

The task force was divided into eight working groups which explored the following policy areas: taxation, energy regulation, transportation, exploration incentives, geological databases, access to land, and regional infrastructure. Some of its concerns and findings included the following:

- Taxation: concerns included rules applied inconsistently throughout the industry, and the comparatively high rates of taxation. The task force called for overhauling and simplifying the tax system, and for revising the regulatory and permitting practices. It was also suggested that coal royalties should be eliminated, as well as sales tax on consumables.
- Energy: in 1985 alone, mines in British Columbia spent $241 million on energy. Numerous recommendations were made to reduce energy costs, such as removal of the water rental fee, site-specific electrical power generation for new mines, private utility lines to new mining projects, a consistent rate structure for electricity (see *Industrial Electricity Rate Discount Act*), and removal of the seven percent tax on fuel used for electric power generation.
- Transportation: with many of British Columbia's natural resources located in remote regions, transportation constitutes a significant component of the industry's costs. In 1985, for example, the mining industry paid $660 million in transportation costs alone, primarily for coal shipments. Recommendations included reducing or eliminating the provincial motive-power diesel fuel tax for fuel used to move mineral commodities, deregulating the railways, and investigating ways to alleviate costs of transporting western Canadian fuel to Ontario.
- Exploration incentives: the task force reported that the mining industry would like to see the institution of exploration incentives through the tax system. It also recommended improving the investment climate, for example, through a B.C. Share Ownership Plan. Prospecting assistance and flow-through share arrangements were encouraged.
- Geological databases: an increase in annual expenditures by the Geological Survey Branch of $5.2 million was recommended to stimulate exploration opportunities.
- Access to land: land claims and the application of single-use land designation were found to have impeded exploration in 20 percent of the land area of the province. It was advised that steps should be taken to ensure certainty of tenure and future access to land for mineral exploration and mine development.
- Infrastructure: the task force noted that the availability of community infrastructure affects the ability of a company to attract a workforce and remain economically viable. Recommendations were made for the development and consistent application of provincial guidelines for infrastructure support.[10]

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[9] *B.C. Business*, Vol. 15, No. 7, July 1987, p. 17.

[10] Mining Association of British Columbia, "Report to the Government of British Columbia by The Mineral Industry Task Force," February 1987.

Coal-fired thermal power plant. The provincial government commissioned a study in 1987 to determine the feasibility of a coal-fired thermal power plant for the East Kootenay region. The report was to provide an overview of a broad variety of concerns, including possible sites for the plants, coal sources, and questions of water supply, environmental protection and operational costs. It was hoped that the project would be developed and sustained by the private sector, have minimal impact on the environment, and revitalize the coal-mining communities in the area.[11]

Assistance Initiatives

Direct Assistance/Grants and Subsidies

Financial Assistance for Mineral Exploration. A one-year, $5- million program, FAME, was initiated in 1986 to promote new mineral development by providing risk capital to prospectors and mineral exploration companies, and to extend the economic life of developed mines, thereby contributing to the stability of mining communities. The program had three components:

- The *Prospector's Assistance Program* provided up to $5,000 to qualified applicants to encourage new mineral exploration. A total of $200,000 was awarded to qualified prospectors in 1986/87.[12]
- The *Mineral Exploration Incentive Program* offered grants up to $150,000 to eligible companies to cover up to one-third of exploration expenses on economically promising mineral properties.
- The *Accelerated Mine Exploration Program* provided grants up to $300,000 or 33 1/3 percent of the total project cost to mining companies exploring existing mines for additional ore reserves.[13]

The announcement of the new program noted that more than 80 percent of British Columbia's existing mines have been discovered by individual prospectors.[14] Awards were made on the basis of the technical quality of the proposal, experience, state of project advancement, local economic impact, financial commitment and financial need.[15] The Ministry of Energy, Mines and Petroleum Resources reported that FAME generated approximately $42 million of exploration expenditures, including $8 million in wages and employment for 56,000 person-days.

With FAME assistance, 11 prospectors found new mineral deposits, 12 mines increased their ore reserves, and 18 mineral exploration projects which received new grants expected to establish new mines within a decade.[16] The program was considered so successful that an additional $5 million was allocated for fiscal year 1987/88, including $400,000 in assistance to prospectors (double the amount of the previous year). An additional $2 million was earmarked for geoscience activity.[17] A mineral exploration geologist was hired by the Ministry of Energy, Mines and Petroleum Resources to provide advice and training to prospectors.[18] In 1988, the Minister of Finance and Corporate Relations announced the termination of FAME, citing the higher metal prices of 1987.[19] However, the Prospector's Assistance Program component of FAME was continued.

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[11] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 7 August 1987.

[12] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 19 June 1986.

[13] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "Exploration British Columbia: Financial Assistance For Mineral Exploration," 1986/87.

[14] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 29 June 1987.

[15] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 22 April 1987.

[16] *Ibid*.

[17] British Columbia, *Budget 1987*, p. 19. Delivered in the Legislative Assembly, 19 March 1987 by the Honourable Mel Couvelier, Minister of Finance and Corporate Relations.

[18] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 16 July 1987.

Commissioner of Critical Industries. In April 1985, the British Columbia government announced the appointment of a Commissioner of Critical Industries. The Commissioner was empowered to recommend that specific operations, firms, or industries in British Columbia be designated as "critical industries." The designation included those considered important to the province's economy and/or those facing economic or financial difficulties. Industries were examined on a case-by-case basis, in consultation with interested parties, including creditors, trade unions, and public bodies. If circumstances warranted, the Commissioner was to have the authority to propose a company-specific Economic Plan designed to enable the critical enterprise to re-open or continue operations. A plan might include such elements as reductions in provincial and municipal taxes and fees, discounted electricity rates, loan eliminations and conversions, equity infusions, and profit-sharing plans. Participation in an Economic Plan was voluntary, and all interested parties were expected to make contributions. Several mines negotiated Economic Plans with the government, including the Bell, Brenda, and Similco mines.

Government contributions to these plans involved tax and fee reductions and electricity discounts. Property taxes were reduced by as much as 50 percent, and the elimination of property tax on machinery and equipment was made effective immediately, rather than over the three-year period proposed in the budget of that year. B.C. Hydro granted discounts of up to 50 percent for specified periods. In addition, unions co-operated by deferring wage increases and developing profit-sharing agreements with companies.

Canada/British Columbia Mineral Development Subsidiary Agreement (MDA). The five-year MDA, part of the 1984 Economic and Regional Development Agreement, was signed in 1985 to provide scientific, technological, and market development assistance to the mineral industry in British Columbia. The provincial and federal governments each contributed $5 million, with the province delivering 94 percent of the program activity. Most of the funds were for new geological maps to aid the search for new ore deposits. Geological mapping, geochemical surveys, and geophysical studies -- including airborne surveys – were conducted mainly by private-sector contractors. The province also expanded and redesigned its computer files of coal and mineral deposit data. Market and feasibility studies were conducted on a shared-cost basis with the private sector.[20] The MDA also sponsored research relating to environmental and health and safety questions.[21]

The MDA ended in 1990, having undertaken many initiatives, including

- 70 geoscience projects;
- 6 mineral economics studies and commodity supply forecasts;
- 6 marketing studies for specific industrial minerals;
- 28 technology development projects;
- 5 studies of infrastructure needs for new projects;

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[19] British Columbia, *Budget 1988*, p. 15. Delivered in the Legislative Assembly, 24 March 1988 by the Honourable Mel Couvelier, Minister of Finance and Corporate Relations.

[20] Canada/British Columbia Mineral Development Agreement, "M.D.A. Report," Vol. 1, No. 1, September 1986.

[21] Canada and British Columbia, "Mineral Development Agreement, Canada-British Columbia 1985-1990; MDA Sustainable Mineral Development" (n.d.).

- 21 geoscience research projects conducted at the University of British Columbia.[22] *(See Table 1, p. 8, for additional financial information.)*

Mineral Opportunities Program. A program was initiated in 1985 under the MDA to assist the mining industry in identifying markets and developing new technologies in exploration and extraction.[23] The Mineral Opportunities Program encouraged cost-shared technology development projects and industrial mineral market studies. A highlight of the program was support for the series of studies on acid mine drainage which led to the development of state-of-the-art technology.

Financial Assistance for Mine Development Program. In 1986, the MDA funding supported a five-year, $1.8-million project for mine infrastructure development, including the provision of environmental and design studies for access roads for projects located in remote regions.[24]

Preliminary engineering studies began in 1988, in cooperation with 19 exploration companies, in order to select a road corridor in the mineral-rich Iskut River and Unuk River areas.

The MDA also provided funding of $50,000 for road access planning studies to Geddes Resources' Windy Craggy mineral property in northwestern British Columbia. The property contains a large copper orebody and has the potential to be a major operation.[25]

A number of roads were subsequently built, some with additional (non-MDA) provincial assistance. For example, Cheni Gold Mines decided to go ahead with its Lawyers gold mine project in the northern B.C. Toodoggone area when the provincial government agreed to lend the company 50 percent of the costs of constructing a $6-million access road. Conditions for repayment of the loan were linked to gold and silver prices. There was also a possibility that the loan would be forgiven if other new development opened up in the area. Other gold deposits in the area had been discovered and some production was expected to take place in the future.[26] Roads were also built to Corona's Nickel Plate mine and North American Metal's Golden Bear gold-silver property.

Geoscience Data Assistance

MINFILE. A new sub-section of the Geological Survey Branch, B.C. Ministry of Energy, Mines and Petroleum Resources, was established to provide more accessible and comprehensive geochemical survey data.[27] Information from the Geological Survey Branch's computerized database of mineral occurrences (MINFILE) was transferred from an IBM mainframe to a VAX mini-computer using a database management system, ULTRA/MANTIS.[28] Developed by the provincial Geological Survey Branch and SHL Systemhouse, the MINFILE software package provides ready access to computerized geological databases and can search map data covering millions of square kilometers while processing 19 variables within microseconds.[29] As of 1989, MINFILE contained information on more than 10,000 mineral occurrences in the province.[30] The MINFILE software went on sale to international markets in February 1989.

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[22] Canada/British Columbia Mineral Development Agreement, "M.D.A. Report," Vol. 3, No. 1, August 1989.

[23] Canada/British Columbia Mineral Development Agreement, "M.D.A. Report," Vol. 1, No. 1, September 1986.

[24] *Ibid.*

[25] Mining Association of British Columbia, *Mining in British Columbia 1990*, Vol. 3, No. 1, January 1990, p. 1.

[26] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 12 June 1987.

[27] Canada/British Columbia Mineral Development Agreement, "M.D.A. Report," Vol. 1, No. 1, September 1986.

[28] *Ibid.*

[29] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 8 February 1989.

[30] Canada/British Columbia Mineral Development Agreement, "M.D.A. Report," Vol. 3, No. 1, August 1989, p. 2.

Infrastructure Assistance

Industrial Electricity Rate Discount Act. Introduced in June 1985, this act provided rate discounts on consumption of surplus hydroelectricity for large, qualifying consumers. The stated objectives of the program were two-fold: the stimulation of new investment and increased economic activity, and the conversion of surplus hydroelectric capacity from a liability to an asset. Discounts would be available for five years for major new plants or expansions, and up to three years for production increases at existing plants.[31] The Industrial Electricity Rate Discount Act ended in the summer of 1988 and was replaced in 1989 by the Economic Development Electricity Rate Act.

B.C. Hydro. The extension of B.C. Hydro's grid was announced in the March 1988 budget to ensure a continued supply of reasonably priced electricity for present and future resource activity.[32]

Tumbler Ridge Gas Subsidy. Northland Utilities, Quintette Coal, the District of Tumbler Ridge, and the provincial government reached an agreement in 1988 that would lower rates and costs of natural gas. Under the agreement, Tumbler Ridge and Quintette coal agreed to forgive $600,000 owed to them by Northland; Northland wrote off losses of $1.7 million; and the provincial government gave a $1.8 million grant for a cost write-off of the Tumbler Ridge gas processing plant.[33]

Research and Development

Mine Environment Neutral Drainage (MEND). The federal agency CANMET, the Canadian mining industry, Environment Canada, British Columbia, Manitoba, Ontario, Québec and New Brunswick agreed to participate in a cooperative MEND program, to find solutions for the prevention and control of acid mine drainage.[34] Acid mine drainage constitutes the main environmental problem for the B.C. mining industry.

Under the program, an Acid Mine Drainage Task Force was established in British Columbia in 1987. The task force of government, university and industry experts was formed to develop an information base on B.C. minesites and publish a technical guide on acid drainage processes and produce a manual on technology application.

Regulation of the Mineral Industry

Land Access and Tenure

Uranium Mining and Exploration. The 1980 moratorium on uranium mining and exploration in British Columbia expired 28 February 1987. Although the seven-year ban was lifted, there was little potential for establishing a uranium mining industry in British Columbia for a number of reasons: the province has an abundance of other energy-generating resources; British Columbia's uranium occurrences are small by world standards; and world uranium markets remained depressed. In response to environmental concerns when the moratorium was lifted, the government stated that the province was not considering nuclear power for future energy planning,[35] and introduced new uranium exploration guidelines based on health and safety concerns.

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[31] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 2 June 1986.

[32] British Columbia, *Budget 1988*, p. 15.

[33] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Releases," 1 September 1988.

[34] Energy, Mines and Resources Canada, *CANMET: Annual Report 1988-89*, 1990, p. 15.

The Mineral Tenure Act. The Mineral Tenure Act was passed by the B.C. legislature in the spring of 1987 and came into force on 15 August 1988. The Act clarified some legal issues which had affected the operation of the industry, reinforced environmental safeguards and provided incentives for the placer mining industry. The land area available for placer staking was expanded by 300 percent; a simplified process for gaining placer rights was established; and environmental safeguards and improved monitoring and inspection systems were introduced. Placer mining is allowed only in certain designated areas where mining would not affect other resources adversely.

The Act also introduced the concept of time-limited tenure in areas under consideration for park designation. Mineral exploration is permitted, under certain conditions, in these "recreation areas."[36] When a mineral potential assessment has been completed in these areas, a minimum ten-year period for exploration is allowed. After this period, the designation of the areas is to be reviewed by the responsible Ministers. A Mediation and Arbitration Board was established to handle conflicts between miners and owners over private surface rights.[37]

Land Claims. A B.C. Supreme Court ruling in July of 1986 gave the Gitksan-Wet'en Tribal Nation a certificate of *lis pendens* on over 500,000 hectares of B.C. Crown land. The ruling meant that the B.C. government could not sell the territory, and also placed restrictions on government use of Crown lands subject to Aboriginal title claims.[38]

Park and Recreational Areas. The B.C. legislature passed a law (under the *Miscellaneous Statutes Amendments Act*) in 1985 clearing the way for mine development in Wells Gray Provincial Park. The legislation gave the Cabinet power to downgrade the 280-hectare claim area to "Recreation Areas," a move which would allow mining (subject to additional controls).

In July 1987, a federal-provincial agreement designated South Moresby in the Queen Charlotte Islands as a national park reserve. Under the agreement, exploration and development can continue on the existing 250 mineral claims in the area. These claims occupy eight percent of the total land base. If a development decision becomes imminent, the provincial government will decide whether to allow production or to buy out the claim.[39]

In 1988, following vocal public opposition to resource development in Strathcona Park on Vancouver Island, the B.C. Cabinet accepted a recommendation to impose a ban on resource development in the park. Subsequently, the government ceased issuing permits for exploration activities in all provincial parks, in order to reconsider the whole issue. Later that year, the government announced its new policy prohibiting mineral exploration and development within all Class A provincial parks.

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[35] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 17 December 1986. See also, 22 December 1986.

[36] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 5 August 1988.

[37] *Ibid*.

[38] *The Globe and Mail*, 19 July 1986, p. A4.

[39] "South Moresby Report: National park won't halt exploration on islands," *Mining Review*, September/October, 1987, pp. 15-19.

As a result of the government moratorium, Cream Silver Mines Ltd. filed a damage claim in the British Columbia Supreme Court, their stock having fallen from $3.45 to $0.15. The company has 106 mineral claims in Strathcona Park and had spent over $1 million on exploration. Two appraisals estimated that the property was worth at least $72 million. The company president stated, however, that the government had offered only to reimburse the company for its "out-of-pocket" costs.[40]

Resource industry representatives were concerned about the moratorium and the decision of the Strathcona Park Advisory Committee to rescind valid mineral claims. However, submissions from representatives of the forestry and mining industries constituted only 25 out of the 250 written submissions and 145 oral presentations considered by the committee.[41]

Some restrictions were eased in late 1988, when approximately one million hectares in 28 recreation areas were opened to time-limited exploration under the new Mineral Tenure Act. In 1989, the B.C. government removed two areas containing mineral deposits at Lindquist Lake and Mt. Alcock from the Provincial Parks designation, establishing them instead as Recreation Areas to allow for their assessment.[42]

Mining Regulation

The Coal Amendment Act. The B.C. legislature passed Bill 51 in 1985 after extensive review by the Ministry of Energy, Mines and Petroleum Resources in consultation with the industry. The Act was designed to remove a number of costly administrative requirements and to reduce government interventions in the coal industry in the hope that these measures would make British Columbia more attractive to investors. One significant change was the termination of statutory work requirements, which were perceived to be a burden on the industry. The Act contains about two dozen administrative changes aimed primarily towards deregulation.

Environmental Regulation

Environmental Assessment and Mine Reclamation. Under British Columbia's 1969 mine rehabilitation legislation, all mining projects are assessed for their social, environmental and economic impact by the Mine Development Review Process which operates under the auspices of the Ministry of Energy, Mines and Petroleum Resources. Planning, decommissioning and reclamation can contribute up to 15 percent of the project costs of a mine.[43] In the case of minesites abandoned prior to 1969, the B.C. government has assumed responsibility for rehabilitation.[44] In 1988, for example, the Ministry of Environment and the Ministry of Energy, Mines and Petroleum Resources became involved in reclaiming an old copper minesite at Mount Washington in order to control acid drainage into nearby river systems which was blamed for severely depleting the salmon stocks.

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[40] "Mining Company Sues B.C. Government," *The Globe and Mail*, 13 July 1989.

[41] Former B.C. and Yukon Chamber of Mines president Nicholas Carter, cited in "Land use dominant issue at B.C. and Yukon mining meeting," *The Northern Miner*, 20 February 1989, p. 5.

[42] British Columbia, Ministry of Energy, Mines and Petroleum Resources, *Mineral Market Update*, Vol. 2, No. 1, January 1990, p. 17.

[43] "Making the Public Aware," *Mining in British Columbia*, January/February 1990, p. 27.

[44] "Leading the Way in Acid Drainage Studies," *Mining in British Columbia*, October 1989, p. 2.

Transport of Dangerous Goods Act. This 1985 act was designed to harmonize with the federal *Transportation of Dangerous Goods Act* which also came into effect in 1985 and provides a system for the identification of hazardous goods and for control of their transport throughout Canada.

Health and Safety Regulations

Uranium exploration and development guidelines. New health and safety regulations affecting uranium mining in British Columbia were announced in late 1986, reflecting the recommendations of the 1981 Bates Royal Commission on Uranium Mining. Although uranium mining was not expected to take place in British Columbia in the "foreseeable future," the regulations were introduced to deal with the possibility of uranium exploration activity resuming at some later time.[45]

Under the new guidelines, uranium occurrences are referred to as "designated areas." Such areas include all old claims frozen under the moratorium, new sites where uranium or thorianite was the object of exploration, and all other areas where grades of more than 0.05 percent of these two minerals existed. No exploration is permitted in these areas without public notice and the written permission of the Chief Inspector of Mines. Approval for a project is contingent upon successful referral to the Ministries of Health and Environment. Those undertaking exploration must conduct surveys of background radiation and report any findings of the two minerals with grades greater than 0.05 percent. Further exploration is subject to rigorous guidelines and safety requirements. If a mine development were proposed, the project would have to pass first the province's review process and then the regulations of the Atomic Energy Control Board of Canada.[46]

Safety Audit Program. New mines and advanced exploration projects, as well as existing operations, are to be assessed under a new safety audit program announced in 1989. Following a study of mining safety at five northwest minesites, the program was initiated by the Chief Inspector of Safety to assess company adherence to the Mines Act and Regulations and to facilitate safety in mining.

The study also concluded that more emphasis should be placed on mine rescue preparedness as well as on the formulation and communication of safety policies and procedures. It was noted that accident frequency in the mining industry was lower than in other heavy industries in the province.[47]

Workers' Compensation. The first Workers' Compensation Act in British Columbia was passed in 1916. A major development in the 1980s has been the transformation of the fund from a state of unfunded liability (for long-term commitments) to a position in 1989 where it was overfunded. This has been accomplished despite the passage of a number of measures in the decade which have placed a greater burden on the fund, without allowing a corresponding increase in revenues. An increase in the rate of return on WCB investments contributed significantly to the improvement of the funding position over much of the 1980s.

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[45] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 17 December 1986. See also, 22 December 1986.

[46] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 26 February 1987.

[47] British Columbia, Ministry of Energy, Mines and Petroleum Resources, "News Release," 29 August 1989.

There were several changes in WC policies in the period 1985-89. A new Experience Rating Plan was introduced in 1986, and employers were to be covered by it by the end of 1987. Under this plan, individual firm's WC rates are calculated according to the firm's own accident rates. Specifically, rates are based on the ratio of a firm's claims to the assessments it paid in the previous two years, as compared with the average ratio for that firm's rate group, or industry classification. Metal mining was included in the first year of the Experience Rating Plan, while other sectors of the mineral industry were added in 1987.

The assessment ceiling (i.e. the percent of payroll subject to the applicable WC rate), which had been frozen in 1984 and 1985, was allowed to increase in 1986. At the same time, the benefit ceiling increased by almost 25 percent.

The introduction of the experience rating led to sizeable reductions in the rates and assessments in the mineral sector in British Columbia, in spite of the ceiling increases. For mining as a whole, assessments dropped from $27 million in 1985 to $15 million in 1896, while production value held steady. For "class b" firms (mainly metal mining), the assessment rate dropped from $4.80 per $100 of gross payroll in 1985 to $3.84 in 1986. By 1988 it had fallen to $2.75, although 1989 saw a rise to $3.30. Coal mining showed an even sharper drop, $3.43 in 1985 to 90 cents by 1988 and 10 cents in 1989.

In the separate Silicosis Fund, the rate for silicosis claims related to metalliferous mining (including asbestos) fell from $4.02 in 1985 to $1.00 by 1987.

Trade Initiatives

International Trade

British Columbia is heavily dependent on trade, with exports comprising 25 percent of its gross domestic product. Mineral products constitute 22 percent of total exports.[48] Coal exports reached $1.5 billion in 1989, with Japan accounting for nearly 70 percent. Metallic minerals exports added another $1.9 billion in 1989, again with more than half going to Japan.[49]

Trade Development Initiatives. The provincial government repeatedly emphasized the importance of developing policies which facilitate international trade, and supported a Canada/U.S. bilateral trade agreement as well as active Canadian participation in GATT negotiations. In addition, the government stated its intention to foster its own Pacific Rim connections. This was to be achieved through education, trade and tourism. The B.C. Minister of Economic Development signed an agreement with Ottawa to promote Vancouver as a Pacific Centre for Trade, Commerce and Travel.[50] Agreements of this kind are particularly important to British Columbia's mineral industry which (because of the high transportation costs to Eastern North America and Europe) relies primarily on trade with Pacific Rim markets, especially with Japan.[51]

On 16 May 1989, *The Trade Development Corporation Act* (Bill 3), an act to promote British Columbia exports, received third reading.[52]

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[48] Canada and British Columbia, "Mineral Development Agreement, Canada-British Columbia 1985-1990; MDA sustainable mineral development" (n.d.).

[49] British Columbia, Ministry of Finance and Corporate Relations, *1990 British Columbia Economic and Statistical Review*, p. 82.

[50] British Columbia, *Budget 1987*, p. 4.

[51] *B.C. Business*, Vol. 15, No. 8, 21 August 1987.

[52] British Columbia, *Budget 1988*, pp. 16-17.

Japanese Coal Purchases. The success of the $3-billion coal development in northeast British Columbia – Denison's Quintette Coal mine, and Teck Corp.'s Bullmoose mine – depends on the viability of the Japanese steel industry, because 90 percent of northeast coal is sold into the Japanese market. With their steel industry in a slump since 1983, however, the Japanese negotiated reductions in both volumes and prices with the northeast producers. When the Japanese interests pushed for further cuts, the industry successfully lobbied the B.C. government for tax and royalty relief.[53] The provincial government had already provided $1.5 billion for infrastructure for the Quintette and Bullmoose mines.[54] In January 1987, the Japanese steel companies won a further price reduction to $94 a tonne on half of the coal shipped from the Quintette coal mine. Although well above the 1987 world price of $60 a tonne, the amount was still below the figure Quintette said it needed to remain profitable. When Quintette and the Japanese buyers could not reach an agreement, a private arbitration panel ordered Quintette to reduce its prices and reimburse its customers.

Taxation Matters Affecting the Industry

General Taxation

March 1985 Budget. Income tax and corporate rates remained unchanged. A number of measures were introduced to ease the tax burden on business and provide incentives for investment. Some general taxation initiatives were relevant to the mineral sector:

Property tax changes:

- property taxation on machinery and equipment was to be phased out by 1987;
- school property tax rates on industrial and commercial properties, were re-evaluated, effectively reducing taxes on the industrial property class by an estimated $144 million over the ensuing three years;
- from 1986 to 1990, the provincial government was to forgive 50 percent of the school property tax on new industrial investment in non-municipal areas;
- under the Provincial-Municipal Partnership (Taxation Measures) Act, a similar reduction would be possible in municipal areas as well;
- portable buildings were to be treated as real property for the purposes of the Social Service Tax Act and only materials used to construct such buildings were to be subject to the tax.

Water tax changes:

- water rental fees for the generation of hydroelectric power were frozen for five years, beginning in 1985. The 1985 indexing factor of 6.1 percent had been deferred by order-in-council in December 1984.

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[53] *Alberta Report*, 21 July 1986, p. 17. See also, *B.C. Business*, Vol. 14, No. 4, April 1986, p. 10.

[54] *Alberta Report*, 16 March 1987, p. 19.

Excise Tax Changes:

- tax rates for off-road use of motor fuels and aviation fuel were reduced from levels of 10 to 20 percent to 7 percent of the pretax selling price.

Corporation Capital Tax Changes:

- the corporation capital tax was phased out (except for banks with head offices outside of British Columbia) over a three-year period beginning in 1985. Revenue from the tax, which had been growing at 15 percent in recent years, had been estimated at $182 million for 1985/86.

Small Business Tax Credits:

- tax credits were proposed for small businesses, to assist with payroll costs and as an incentive for venture capital in certain types of business, including manufacturing, processing, and research and development.

March 1986 Budget. The general corporate income tax rate was reduced from 16 percent to 15 percent, effective 1 January 1987.

March 1987 Budget. Corporate income tax dropped to 14 percent, effective 1 January 1988. Other tax reductions included a cutback in sales taxes applicable to equipment used in the mining industry, a saving of about $10 million. The industry was also expected to save approximately $5 million as a result of a drop in the general sales tax.[55]

March 1988 Budget. The small business income tax rate was reduced from 11 percent to 9 percent, effective 1 July.[56]

Small Business Venture Capital Act. This act was amended under The Miscellaneous Statutes Amendment Act, 1987 (Bill 42), effective 14 September 1987, to foster the participation of venture capital corporations in helping to initiate and foster new businesses. The Small Business Venture Capital Amendment Act (Bill 51), which received Royal Assent 29 June 1988, underwent further revisions to encourage investment in small business.

Mining Taxation and Fees

The Land Act Fees Regulation under the Land Act and the Ministry of Lands, Parks and Housing Act was repealed and replaced. As a result, a new fee schedule for leases, licences and other dispositions of Crown land for mining and quarrying became effective on 1 December 1987. Under the new schedule, the fees payable were "considerably enhanced."[57]

The Taxation Statutes Amendment Act, 1987 (Bill 37). The Bill received Royal Assent in late May 1987 and amended the *Mining Tax Act* to clarify what is included in the determination of net income derived from mining operations.[58] The *Mineral Land Tax Assessment Regulation, 1983*, was amended under the *Mineral Land Tax Act*, altering the definition of "production revenue."[59]

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[55] *B.C. Business*, Vol. 15, No. 7, June 1987, p. 21.

[56] British Columbia, *Budget 1988*, p. 13.

[57] Millie Goodman, *Tax Memo: 1987 Tax Developments*, No. 73, Toronto, Canadian Tax Foundation, March 1988, p. 283.

[58] *Ibid.*, p. 282.

[59] *Ibid.*, p. 283.

Mineral Resources Tax. In the 24 March 1988 budget, it was announced that the Mineral Resource Tax rate would be reduced from 17.5 percent to 15 percent, effective 1 July 1988, and that the *Mining Tax* rate would drop from 15 percent to 12.5 percent. This was expected to reduce mining taxes by $1 million in 1988/89 and by $3 million in 1989/90.[60]

The Mineral Tenure Act (Bill 66). The Bill received Royal Assent 11 March 1988, consolidating the province's mineral tenure laws and clarifying aspects of the Act.

Mineral Tax Act. A new act was passed in the provincial legislature 14 July 1989 and came into effect 1 January 1990. In response to recommendations made by the Mining Industry Task Force in 1987, the B.C. government introduced a new simplified, profit-based tax system. The new Act consolidated the four existing provincial tax regimes, replacing the *Mineral Resources Tax Act*, eliminating the coal royalty in the *Coal Act*, and amending the *Mineral Land Tax Act* and the *Mining Tax Act*. Under the new Act, individual mines were to be taxed on their net revenues while allowance would be made for competitive return on investment. A minimum tax on each mine's proceeds was also imposed on all mines that had a positive net operating cash-flow. The elimination of the coal royalty came in response to the concern that the royalty seriously threatened the province's coal operations. It was argued that removal of the royalty would allow the mines to continue operations and modernize,[61] although the industry felt that the tax levels for coal were still somewhat high.[62]

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[60] British Columbia, Budget 1987, p. 15 and p. 28.

[61] "B.C. Mining Companies Face New Profit-Based Tax," *The Northern Miner*, 24 July 1989.

[62] *Ibid.*

6. Alberta

Introduction

Industry Trends

> Alberta's mineral endowment lies mainly in petroleum and natural gas, coal, and oil sands, as well as some industrial and metallic minerals, placer minerals and salts. Alberta has 55 percent of Canada's coal reserves and leads the other provinces in coal production. Much of Alberta's coal is consumed locally for domestic electric power generation, protecting the industry from some of the fluctuations in world demand and supply that affect coal produced for export. Although coal constitutes the province's principal mining activity, it is superseded in economic importance by the petroleum industry.[1] Alberta's total mineral production values reached $16.2 billion in 1989. Fuels comprised $15.5 billion of that total, with coal accounting for $503 million. Production values for sulphur (a by-product of the gas industry) were estimated at $400 million.[2]

Alberta has enormous reserves of oil sands, a resource which is mined and then processed to compete with conventional crude oil. A steep decline in world oil prices in the mid-1980s created problems for Alberta's oil sands projects. Both Suncor and Syncrude managed to reduce operating costs, and prospects began to improve as oil prices stabilized.[3]

As demand from Japan for thermal and coking coal declined in 1985-87, several Alberta communities, such as Grande Cache, Edson and Hinton, which continued to rely on export coal for their economic base suffered from intermittent layoffs.

By 1988, however, rising international demand for coking coal stimulated production at Alberta mines to record levels. The rate of coal production for local electric power generation increased over the period 1985-89.[4] The new Genessee thermal coal mine near Edmonton began production in 1988, to supply coal to a new 400-megawatt coal-fired power plant.

MPLC Canadian Magnesium Holdings and the Alberta Natural Gas Company Ltd. undertook a joint venture to build and operate a new magnesium smelter at Aldersyde, near High River. The smelter was expected to use a new magnesium production technology developed by MPLC.[5] The site was chosen because of the availability of natural gas.

Metallic minerals are not mined in Alberta, but exploration activities, particularly in gold, increased in the latter half of the decade.[6]

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[1] "Alberta: Canada's largest coal producer," *Canadian Mining Journal*, September 1987, p. 17. See also, Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989.*

[2] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*, p. 3.8.

[3] Alberta Energy, *Annual Report March 31, 1986*, 5 January 1987, pp. 19-20. See also, *Annual Report March 31, 1987*, 5 January 1988, pp. 1-2.

[4] "Alberta: Canada's largest coal producer," *Canadian Mining Journal*, September 1987, p. 17.

[5] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*, p. 37.1.

[6] Alberta Energy, *Annual Report March 31, 1987*, p. 15.

Highlights of Government Initiatives

Several government departments were restructured early in 1986. The Alberta Department of Energy and Natural Resources was renamed Alberta Energy, and responsibility for renewable resources was moved to the new Department of Forestry, Lands and Wildlife. Alberta Energy retained responsibility for the Mines and Minerals Act, the Mineral Titles Redemption Act, the Freehold Mineral Rights Tax Act, and the Petroleum Incentives Program Act. The former Exploration Branch of the Mineral Resources Division was eliminated, and exploration inspections and approvals were moved to Forestry, Lands and Wildlife.[7]

The provincial government funded many resource research initiatives in 1985-89, including a new $22-million coal research centre at Devon, Alberta, which opened September 1985 with support from the Alberta-Canada Energy Resources Research Fund. Governments also provided assistance to the troubled oil sands projects in the mid-1980s. Both the federal and Alberta governments pledged support for a proposed $4.2 billion Other Six Leases Operation (OSLO) oil sands venture. By the end of the decade, however, the federal government withdrew its support.

Alberta was also involved in the efforts to find new coal markets under the umbrella of a task force and study which examined ways to market western coal in Ontario.[8]

Mineral-Related Task Forces and Studies

Task Force on Expanded Use in Ontario of Low-Sulphur Western Canadian Coal. The energy ministers of Alberta and Ontario had established a task force in 1984 to examine the potential for greater use of western Canadian coal in Ontario. The task force met with the major coal users, the coal producers, and representatives of the transportation system. Subsequently, a federal/provincial task force was formed to examine ways to facilitate the selling of western Canadian coals to one major consumer: Ontario Hydro. The federal/provincial task force, which released its report in June 1986, included the federal government, the western coal-producing provinces and Ontario.

Action Committee on Western Canadian Low-Sulphur Coal to Ontario. The Action Committee was established March 1987 to follow up initiatives to market western coal to Ontario. The federal and Alberta governments committed $27 million and $16 million, respectively, toward various projects endorsed by the Action Committee.[9] In one project, the governments of Alberta, Ontario and Canada agreed to provide $956,152 towards research on ways to use existing oil pipelines to transport low-sulphur coal to Ontario. The plan was to mix the coal (in a pulverized form) with oil to produce a slurry, which would be separated in Ontario. The coal would then be used in power stations and the oil sent on to refineries.

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[7] Alberta Energy, *Annual Report March 31, 1986*, p. 8. See also, Alberta Energy, and Forestry Lands and Wildlife, "Information Bulletin," 2 January 1987.

[8] "Acid rain curbs may boost sales of western coal," *The Financial Post*, 19 June 1989.

[9] "Coal Pipeline Project," *Mining Journal*, 17 November 1989, Vol. 313, No. 8046, p. 407. See also, Alberta, "News Release," 30 October 1989.

Crown Corporations, Direct Investment/Equity Participation

Syncrude Canada Ltd. Syncrude mines, extracts and upgrades oil sands and produces synthetic crude from the Athabasca oil sands. The Alberta government is a part-owner, through Alberta Oil Sands Equity (17 percent) and Alberta Energy Company (10 percent). Alberta receives a joint-venture payment of 50 percent of the project's net profits, in lieu of a royalty. In 1986, the provincial government assisted in financing completion of the basic engineering and planning for a $4-billion Syncrude expansion project. The engineering cost of the expansion was estimated at $85 million. The Alberta government offered a loan of up to $200 million to cover any net cash flow deficiencies in the 1987/88 fiscal year, to facilitate continuation of the Capacity Addition Project in the face of low prices for crude.

Other Six Leases Operation (OSLO). The federal and Alberta governments offered in June 1988 to help finance the proposed $4.2 billion OSLO oil sands mining and processing project near Fort McMurray. The project was expected to provide 4,000 construction jobs and 6,000 indirect supply and services jobs (see below).[10] In 1989, The Alberta Heritage Fund invested $6.8 million in the project. Total provincial equity participation in the plant was estimated at $310 million.[11] Although the federal government pledged support of approximately $1.4 billion, it subsequently withdrew that support in 1990, leaving the future of the project in doubt.[12] The OSLO consortium included Esso Resources Canada, Canadian Occidental Petroleum, Gulf Canada, Petro-Canada, Pan-Canadian Petroleum and provincially owned Alberta Oil Sands Equity.[13]

Magnesium Company of Canada Ltd. (MAGCAN). The Aluminum Company of America (Alcoa) and MPLC Canadian Magnesium Holdings announced plans in April 1986 to build a $375-million magnesium smelter, but in October, Alcoa withdrew. MPLC announced in July 1988 that it had a new joint venture partner: Alberta Natural Gas Company Ltd., a provincial Crown corporation. The new venture, Magnesium Company of Canada Ltd., would be built and operated at Aldersyde, near High River. Construction costs of the MAGCAN complex were estimated at $370 million. The provincial government provided $265 million in loan guarantees. Baymag Mines Co. Ltd., owner of a high-purity magnesite deposit near Radium Hot Springs, British Columbia, would provide feed material. Metal production was expected for March 1990.[14]

Westaim. In 1989 Canada and Alberta announced contributions of $30 million and $40 million respectively towards a joint venture with Sherritt Gordon to build a research facility next to the company's coinage and metal processing facilities at Fort Saskatchewan. Its focus will be on advanced industrial materials research.[15]

[10] "Federal-provincial sands offer awaits private firms' evaluation," *The Toronto Star*, 18 July 1988, p. B2.

[11] Alberta, *Budget Address 1989*, 8 June 1989, p. 41.

[12] *The Globe and Mail*, 20 September 1990, p. B4.

[13] "Bail-out clause in $2.8 B offer to launch OSLO," *The Edmonton Journal*, 25 September 1988, p. A1.

[14] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*, p. 37.1.

[15] "Sherritt expanding coinage facilities," *The Northern Miner*, 14 May 1989.

Assistance Initiatives

Direct Assistance/Grants and Subsidies

Carbovan Inc. In 1987, the federal and provincial governments offered funding to Carbovan Inc. to build a new vanadium and carbon extraction plant in Fort McMurray. The plant would use the oil sands residue as feedstock. The federal Western Transportation Industrial Development Program (under the federal Western Economic Diversification Office) provided a $2-million grant, and the Alberta Opportunity Company assisted with a $6-million loan.[16]

Canada/Alberta Northern Development Subsidiary Agreement (NDSA). Unlike the other provinces and territories, Alberta did not have an MDA in the period 1985-89. It did, however, have the NDSA, a component of the Canada/Alberta Economic and Regional Development Agreement, which was signed on 2 October 1985. The $40-million NDSA provided limited assistance for first-time commercial development of new resources to small and medium-sized businesses that were active in oil and gas, metals and minerals. The goal of the NDSA, which commenced in March 1986, was to foster economic development in northern Alberta.[17] Although it was due to expire in 1991, the program was extended in 1992 to use up funds remaining from the original agreement.

One mineral-related project funded by the NDSA was operated by the Fort Chipewyan Development Corporation, which received $609,942 to test the technical and commercial viability of granite extraction.

Geoscience Data Assistance

Land-Related Information System (LRIS) Network. Alberta instituted a new *Electronic Access to Government Land Data* policy in 1987, which formed part of the government initiative to develop a provincial LRIS Network. The network was designed to provide an automated database of government land information, in the form of text as well as maps represented in computer graphics. The goal of the policy was to develop a system to enhance the utility and public accessibility of government land data. The interdepartmental Land-Related Information Services Steering Committee developed the proposal, and an LRIS Management Committee was established during 1988-89 to develop standards for the network.[18]

Infrastructure Assistance

Resource Roads. Over $56 million was budgeted in 1988 for Alberta resource road projects, an increase of 40 percent over the previous year.[19] In 1989, the government allocated $100 million to general development of all the province's secondary highways, an $18-million increase over 1988. This initiative, aimed at developing the rural areas, was expected to help prepare for an increase in traffic from the proposed OSLO project.[20] Resource development also received some infrastructure support under the NSDA.[21]

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[16] Alberta, "News Release," 28 August 1987.

[17] Alberta, "News Release," 20 October 1986.

[18] Alberta, "News Release," 22 April 1987.

[19] Alberta, "News Release," 24 March 1988.

[20] Alberta, *Budget Address 1989*, p. 15.

[21] Canada/Alberta, "Notice Board," Northern Development Subsidiary Agreement, Vol. 3, No. 2, Winter 1989.

Research and Development

Coal Research Centre. One of the world's largest and most sophisticated coal research centres opened in September 1985 in Devon, Alberta. Construction of the $22-million research complex was funded by the Alberta/Canada Energy Resources Research Fund, a joint program of the federal and Alberta governments, and administered by Alberta Energy. The Centre houses the coal department of the Alberta Research Council, the Coal Mining Research Company (a private, non-profit organization) and the Coal Research Laboratory of CANMET. The complex has three components: a pilot plant with space to test mining equipment and coal-processing techniques; an office/laboratory complex containing a library, meeting rooms, offices and analytic laboratory facilities; and a laboratory for research conducted at high temperatures and pressures.

The Alberta Office of Coal Research and Technology provides funding under the *Coal Research Grant Program*. This program was established to encourage scientific excellence in coal-related research, with the objective of placing Canadian coal technology in a position of world leadership. Research grants are awarded annually to researchers in both academic and non-academic research institutions across Canada for various coal-related projects. Many projects in the late 1980s were part of the ongoing strategy to interest eastern Canada in buying low-sulphur western coal. New technologies were developed to improve minesite and transportation costs and the burning quality of coal.[22]

A $10.6-million demonstration project at Cold Lake, using low-emission coal-burning technology to generate steam for heavy oil recovery, received funding in 1989 from the federal Western Economic Diversification Office ($2.8 million) and Alberta Energy ($2.4 million). The remaining funds were contributed by industry participants, including Esso Resources Canada Limited, TransAlta Resources, Shell Canada Limited, TransAlta Utilities Corporation, and Alberta Power Limited. The technology would provide a new use for Alberta's coal reserves and offer a technique that makes coal burning much cleaner.[23]

Magnesium Company of Canada Ltd. (MAGCAN), the joint venture by Alberta Natural Gas and MPLC to build a new magnesium smelter, planned to use a new MPLC process which was thought to be a major breakthrough in magnesium production technology. A single-step reactor would convert magnesite ore directly to molten anhydrous magnesium chloride, the raw material required for electrolytic reduction to primary metal. Under this process, it was estimated that fifteen percent less power would be used than is required for the production of aluminum.

[22] Alberta Energy, *Annual Report March 31, 1987*, p. 14.

[23] The Coal Association of Canada, "Coal Focus," November 1989.

Human Resources Assistance

Athabasca Native Development Corporation is a two-year-old community-run company which includes Indian bands and Métis in Fort Chipewyan, Anzac, Janvier and Fort McKay. It signed a new five-year agreement in 1988 with Syncrude and the Alberta and Canadian governments to maximize employment and business opportunities for native communities in the vicinity of Syncrude's Athabasca tar sands plant. The new arrangement expanded on an earlier agreement between the Alberta government and the local Métis. Training, recruitment, business and support programs were to be developed under the agreement to give Aboriginal groups a chance to compete for Syncrude-related opportunities.[24]

Regulation of the Mineral Industry

Land Access and Tenure

Land Access. The Department of Forestry, Lands and Wildlife decided in 1987 to curtail a practice whereby some oil companies entered into agreements with surface owners which prevented other companies from conducting geophysical exploration. The new policy stated that exploration approval would contain a provision for cancellation of a licence if the holder restricted access to the property.[25] Industry ceased such practices; no licences were cancelled.

Integrated Resource Plans. The provincial Cabinet approved four sub-regional integrated resource plans in 1985 for the Castle River, Jean D'Or Prairie, Big Bend, and Lakeland areas. The government, in cooperation with public groups and individuals, formulated the plans, which would serve as resource management and development guides and would affect only public lands and resources, including timber, wildlife, minerals, and cultural and ecological resources. Development would occur at a pace supported by existing program budgets.

Lubicon Lake Band Land Claim. In 1988, Alberta transferred a 25.4-square-mile area to Canada for settlement of this land claim. The transfer, which included rights to mines and minerals, did not restrict the band's right to seek additional reserve land.[26]

Mining Regulation

Various amendments (effective 1 December 1987) were made to the *Mines and Minerals Act* to prescribe new regulations and fees payable under the General Regulation. An *Incentive Credit Regulation* was issued, permitting the acquisition of credits to offset some rents and royalties payable to the Crown. Other changes were made to clarify certain provisions of the Mines and Minerals Act and the *Freehold Mineral Rights Tax Act*.[27]

[24] "Unique Fort Chip Granite to Compete in Canadian Market," *Alberta Native Business News*, Winter 1988/1989, p. 4.

[25] Alberta Energy and Alberta Forestry, Lands and Wildlife, "Information Letter," 7 April 1987.

[26] Alberta, "News Release," 3 March 1988.

[27] Millie Goodman, *Tax Memo: 1987 Tax Developments*, Canadian Tax Foundation, No. 73, March 1988, pp. 243-244.

Environmental Regulations

Transportation of Dangerous Goods Control Act. Following the 1985 federal initiative on the transportation of dangerous goods, Alberta's Transportation of Dangerous Goods Control Act was proclaimed on 1 February 1986.[28] Three new sections (S.7.2, S.7.3, and S.16) of the *Hazardous Chemicals Act* were proclaimed 14 February 1986. It requires that a personal identification number be placed on all generators, transporters and receivers of hazardous wastes. The wastes must have a manifest which describes their consignment, movement, receipt, storage and disposal. A tracking system was instituted, as well as fines for non-compliance.[29]

Round Table on Environment and Economy. On 19 December 1989, Premier Getty announced the establishment of the Alberta Round Table on Environment and Economy. Most provinces and the federal government have established similar round tables, all of which focus on the concept of sustainable development. The Alberta Round Table complements the work of the Environment Council of Alberta which has been developing a strategy on conservation for the province.[30]

Health and Safety Regulation

Workers' Compensation. The Alberta Workers' Compensation Board (WCB) increased employers' assessments by an average 12.5 percent, effective 1 January 1989. According to the president and CEO of WCB, the adjustment was put in place following five years of constrained rates.[31]

The first Workers' Compensation legislation in Alberta came into effect in 1918. The Workers' Compensation Amendment Act was first tabled in 1980 and eventually came into effect in 1982. Among the 1982 innovations was a new definition of "accident" to include potential disability (so that industrial diseases became covered under the Act).

Major changes in Alberta's WC system during 1985-89 include the following:

- 1986: Assessment rates for open pit coal mining dropped from $2.60 to $1.89 per $100 of gross payroll, and total industry assessments fell correspondingly, from $2.5 million to $1.6 million. Underground coal mining, a much smaller sector, saw its rates drop from over $13 to $10 and its assessments from $834 thousand to $495 thousand.
- 1987: A new experience rating system became fully operational, applying to all firms with assessments exceeding $3,000 over the previous three years. The rate for an individual firm was based on its past claims record as compared with the industry average. Rebates or surcharges of up to 40 percent of a firm's class rate are possible, according to individual firm performance.
- 1988: The Workers' Compensation Amendment Act (Bill 30) created a part-time Board of Directors and a separate Appeals Commission.

[28] Alberta, "News Release," 30 January 1986.

[29] Alberta, "News Release," 14 February 1986.

[30] Alberta, "News Release," 19 December 1989.

[31] *Public Sector*, 16 January 1989, p. 3.

- 1989: An Alberta court ruled that the exemption of certain industries from coverage is not discriminatory and therefore does not violate the Charter of Rights. This decision had farreaching implications for all jurisdictions in Canada, as it upheld the legality of a common feature of all twelve WCBs.

Transportation Regulation

Alberta's Department of Economic Development (Transportation Services Branch) released a study in 1985 which examined the level of freight rates charged by the major Canadian railways. The study (based on 1982 figures) concluded that rail traffic originating in Alberta made a disproportionately large contribution to railway constant costs. Although Alberta paid over 70 percent of the constant costs recovered by the railways, the province's traffic constituted only 28 percent of the system's total rail haulage. The Alberta government proposed that new federal transportation legislation include a new maximum-rate rule.

Early in 1986, Canada and Alberta signed a five-year memorandum of understanding, establishing an intergovernmental committee to improve transportation services. The committee's work focused on research and development, improved railway/highway grade crossings, and the provision of infrastructure for resource industries.[32] In June, the Alberta government supported proposed federal legislation (Bill C-126) to overhaul the transportation regulatory system. The proposed legislation emphasized deregulation and uniform regulations. The Alberta administration stated that, while deregulation was desirable for those areas that could support competition, remote and isolated communities would still need regulatory protection.[33]

Trade Initiatives

International Trade

The Alberta government responded positively in 1988 to the Canada-U.S. Free Trade Agreement. Support was also given to the Uruguay Round of the GATT negotiations and to developing multilateral trade with the Pacific Rim. The province is heavily reliant on access to world markets, particularly U.S. energy markets.[34]

U.S. President Bush's 1988 commitment to halve acid rain pollutants will help to open potential markets for low-sulphur western coal. Western Canadian coal contains only 0.3 to 0.4 percent sulphur, compared with 0.8 to 2.5 percent for coal from the eastern United States and 4 to 5 percent for coal from Ohio.[35]

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[32] Alberta, "News Release," 28 February 1986.

[33] Alberta, "News Release," 27 June 1986.

[34] Alberta, *Budget Address 1988*, 24 March 1988, p. 10.

[35] "Acid rain curbs may boost sales of western coal," *The Financial Post*, 19 June 1989.

Taxation Matters Affecting the Industry

General Taxation

The 25 March 1985 budget stated that a five-year program to lower the corporate income tax rate to 5 percent on eligible manufacturing and processing operations would be implemented on 1 April 1985, and the *Alberta Corporate Income Tax Amendment Act, 1985*, received Royal Assent on 5 June 1985. The Act implemented the tax rate change, simplified small business deductions to harmonize with some federal initiatives, and amended certain other provisions.

The value of Alberta's economic output fell by almost 10 percent in 1987, following a 50 percent drop in world oil prices (from $33 per barrel in January 1986 to $14.60 per barrel in July) and weakened grain prices. Consequently, the government increased several taxes, effective 1 April 1987, including the general corporate income tax rate, which rose from 11 percent of taxable income to 15 percent.

In 1986, the government announced increases of up to 75 percent (maximum $3 million) in the royalty tax credit under the *Corporate Income Tax Act*, (effective 1 April 1986) to stimulate the energy sector. Later announcements increased the royalty tax credit to 95 percent for royalties paid during the period 1 April-31 December 1986, and subsequently extended the increase until 31 December 1987.

Effective 1 June 1987, a fuel tax of 5 cents per litre was imposed on gasoline and diesel fuel. Fuel used in commercial off-road vehicles was exempted from the tax or eligible for a tax rebate.

The Alberta government announced a new Alberta stock savings plan, beginning 1 January 1986, providing tax credits to investors (to a maximum of $15,000 annually) in shares of companies listed on the Alberta Stock exchange. The intent of the program was to encourage equity investment in Alberta.

Mining Taxation

A new *Metallic Minerals Royalty Regulation* announced in 1985 provided for the levying of Crown royalties on metallic minerals mined on leased Crown lands over a ten-year period between 21 October 1985 and 1 January 1996.

In September 1986, the *Department of Energy Act* (Bill 3) changed the name of the Department from the Department of Energy and Natural Resources to the Department of Energy. An Advisory Committee on Heavy Oil and Oil Sands development was established, but was slated to expire on 31 December 1987. Bill 3 also made some amendments to the *Freehold Mineral Rights Tax Act*, *Mines and Minerals Act*, and the *Tax Recovery Act*.

Amendments were made in the latter half of the decade to the *Coal Royalty Regulations* (concerning the application of the royalty relief formula) and to the *Freehold Mineral Rights Tax Regulation*.[36]

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[36] Millie Goodman and Deborah L. Ort, *Tax Memo: 1988 Tax Developments*, Canadian Tax Foundation, No. 75, March 1989, p. 203.

The one-percent royalty rate paid by Suncor Oil Sands was extended past its December 1986 termination date to June 1987. Suncor would pay royalties on its new heavy oil project (Burnt Lake), phased-in as the project recovered its costs. Subsequently, the province would receive royalties based on a percentage of the project's net income.[37]

[37] *Ibid.*

7. Saskatchewan

Introduction

Industry Trends

> About 90 percent of Canada's potash and 40 percent of world exports of potash are produced in Saskatchewan. The province also contains some of the highest-grade reserves of uranium known in the western world. Other metals and minerals produced in Saskatchewan include coal, sodium sulphate, special clays, copper, zinc and gold. By-product minerals produced include gold, silver, cadmium, selenium and tellurium. In 1989, approximately 5,200 people were directly employed in the province's mining industry.[1] The value of non-fuel mineral production rose from approximately $1.2 billion in 1985 to $1.5 billion in 1989.[2]

Potash suffered from low prices and high inventories which resulted in a series of closures between 1985 and 1987 of potash mines owned by the provincial Crown corporation, Potash Corporation of Saskatchewan (PCS). Subsequently, PCS streamlined its management structure, and its profits began to rise in 1988. Commercial shipments from PCS's new $10-million potassium sulphate demonstration plant located at the Cory mine began in 1986. The plant, however, was partially closed in July 1988, never reaching its expected output. In July 1988, PCS completed the construction of a new industrial-grade potassium sulphate plant at Big Quill Lake.

During 1988, Saskatchewan Mining Development Corporation and Eldorado Nuclear Limited merged to create Cameco (A Canadian Mining and Energy Corporation).

Exploration expenditures improved dramatically over the 1985-89 period. Interest in gold exploration strengthened in the La Ronge, Reindeer Lake and Flin Flon areas, particularly with the opening of two gold mines: Star Lake and Jolu. Despite low prices, uranium exploration was active as development continued at Cigar Lake, the world's highest-grade uranium prospect.

Highlights of Government Initiatives

The provincial government responded to low prices and high potash inventories in the mid-1980s by introducing new marketing initiatives designed to broaden the market for Saskatchewan potash. The world potash industry was closely monitored to identify opportunities to maintain Saskatchewan's dominance in this market. The government also participated in trade negotiations after the United States imposed countervailing duties on potash.

Increasing U.S. protectionism in the uranium industry was also a problem. The Canada-U.S. Free Trade Agreement, however, was expected to increase

[1] "Saskatchewan's mining industry gains momentum," *Business Review*, April/May/June 1989, pp. 15-16. See also, "Saskatchewan Bureau of Statistics: Economic Review, 1988," No. 43, 1989; and Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*, p. 3.7.

[2] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*.

the access of Canadian producers to the U.S. market, although it did not eliminate the threat of countervailing duties and other trade protection measures.

Other government activities:

- projects funded by the 1984-88 Canada/Saskatchewan Mineral Development Agreement;
- implementation of the Mineral Industry Diversification Program in 1989-90 in order to maintain exploration momentum after the expiration of the MDA;
- replacement of the old *Mineral Resources Act* with the *Minerals Resources Act 1985* and the *Crown Minerals Act*;
- introduction of the *Mineral Dispositions Regulations, 1986*, including uranium royalties;
- introduction of the *Potash Resources Act*;
- review of coal royalties and taxes and participation in the Action Committee on Western Canadian Low-Sulphur Coal to Ontario;
- introduction of *The Coal Disposition Regulations*;
- reorganization of the Resource Policy and Economics Division into three new branches: Energy, Industrial Minerals, and Metallic Minerals.[3]

Mineral-Related Task Forces and Studies

Federal/Provincial Task Force on the Expanded Use in Ontario of Low-Sulphur Western Canadian Coal. The federal government, the western coal-producing provinces and Ontario participated in a task force to examine ways to facilitate the selling of western coal to Ontario Hydro. An Action Committee on Western Canadian Low-Sulphur Coal to Ontario was established March 1987.

Action Committee on Western Canadian Low-Sulphur Coal to Ontario. This Committee included British Columbia, Alberta, Saskatchewan, the federal government and Ontario. Saskatchewan co-chaired a technical subcommittee on low-rank coal upgrading.[4] The subcommittee's mandate was to examine ways to improve the heating values and transportability of low-rank coals, thereby improving the economics of moving the coal into the Ontario market. Its first project examined a patented method of stabilizing thermally dried coals, unfortunately without success. The second project sought to develop a quantitative method of evaluating the stability of upgraded coals so that upgrading processes could be effectively compared.

Crown Corporations, Direct Investment/Equity Participation

Potash Corporation of Saskatchewan. A provincial Crown corporation, PCS produces about 35 percent of the province's potash. In 1985, low prices and high inventories prompted PCS to close its five mines temporarily. Markets for potash had been weakened by increasing world production (including a new mine in New Brunswick) and by erratic and falling demand. Further temporary mine closures occurred throughout the 1985-87 period. PCS cut costs and production by streamlining its management structure, reducing its workforce, and concentrating production in its lower-cost mines. PCS profits started to rise by 1988, reaching over $100 million for the year.

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[3] Saskatchewan Energy and Mines, *Annual Report 1988-1989*, p. 9.

[4] *Ibid*, p. 11.

In 1987, the government wrote off $662 million of PCS debt and reorganized its management. In the 8 March 1989 throne speech, the government announced plans for public share offerings in PCS and in two other government enterprises. PCS assets were estimated at $1.2 billion.[5]

In response to vociferous opposition criticism, the government added some safeguards against the possibility of foreign ownership:

- the Saskatchewan government would retain a significant portion of the company's shares;
- no single shareholder except the government could hold more than 5 percent;
- those holding more than 5 percent would lose their voting rights; foreign ownership was limited to 45 percent of the shares in total and 25 percent of the voting power;
- the new corporation would be prohibited from selling, leasing, or trading its property.

The debate about the legislation to permit privatization of PCS was said to be the longest in the history of the province.[6] Debate was limited on 2 August 1989, and on 14 August the legislature passed Bill 20 privatizing PCS.

Saskatchewan Mining Development Corporation (SMDC). In May 1985, *Cigar Lake Mining Corporation* was established to develop the highest-grade uranium deposit yet discovered in the world, at Cigar Lake, Saskatchewan. The Saskatchewan Crown corporation SMDC owned 50.75 percent of the corporation, with the remainder held by the French firm, COGEMA Canada Ltd.; the Japanese firm, Idemitsu Uranium Exploration Canada Ltd.; and a COGEMA subsidiary, Corona Grande Exploration Corporation. Preliminary development work was projected to cost about $4 million over two years and aimed at solving ground and environmental problems.

SMDC also owned 50 percent of the Key Lake uranium mine (Uranerz Exploration and Mining Ltd. and Eldor Resources Ltd. held the remainder) and 20 percent of the Cluff Lake uranium mine (with Amok Ltd. holding the remainder). Uranerz is a West German-based mining company active in Canada.

SMDC and Starrex Mining Corporation signed a joint agreement in 1985 covering the construction and mine development schedule for the Star Lake gold deposit, located 115 kilometres north of La Ronge. Starrex and SMDC each owned 50 percent of the project. Uranerz funded Starrex's portion of capital costs for the project in return for a chance to earn an equity interest in the property. SMDC signed a joint-venture agreement with Golden Rule Resources and Goldsil Resources, enabling the partners to accelerate gold exploration activities on 230,000 acres located along the La Ronge greenstone belt which surrounds the Star Lake property. The partners hoped the agree-

[5] "Devine wants to sell, potash, energy, insurance co's," *Public Sector*, 13 March 1989, p. 2. See also, "Saskatchewan puts safeguards on Potash selloff," *Public Sector*, 17 April 1989.

[6] Saskatchewan, "News Release," 2 August 1989.

ment would encourage other companies to become active in gold exploration in the area.

Canadian Mining and Energy Corporation (Cameco). During 1988, SMDC and the federal Crown corporation, Eldorado Nuclear Limited, merged to create a Canadian Mining and Energy Corporation, the world's largest uranium production and marketing company. The name was later shortened to Cameco. The company was initially owned by Saskatchewan (which held 61.5 percent) and the Government of Canada (holding 38.5 percent).[7] Total assets after the merger were estimated at $1.5 billion, including the Rabbit Lake, Cluff Lake and Key Lake mines and some gold properties in Saskatchewan and Eldorado's Ontario properties and processing facilities. Cameco was to be privatized over a seven-year period.

In 1989, Cameco responded to low world uranium prices by shutting down its Rabbit Lake property for six months and delaying the planned privatization of the corporation until 1990.[8] The same year, an agreement was reached to have Cameco assume operation of the Key Lake mine. Consolidation of the support services for the Key Lake and Rabbit Lake mines was expected to reduce costs.

Saskatchewan Minerals. In 1988, the private-sector firm Kam Kotia Mines Ltd. acquired the operating assets of the sodium sulphate division of Saskatchewan Minerals, a Crown company.

Assistance Initiatives

Direct Assistance/Grants and Subsidies

Canada/Saskatchewan Northern Economic Development Subsidiary Agreement. This five-year (1984-89) federal/Saskatchewan agreement focused on economic development. Direct industry-related training for exploration and for mine/mill operation was heavily emphasized. Small mine-related business development projects and a regional environmental baseline study for the LaRonge gold belt were also completed.

Canada/Saskatchewan Mineral Development Agreement (MDA). The five-year, $6-million MDA was introduced in 1985 and ended in March 1989. The program provided the main source of funding for geological mapping and mineral deposit studies in an area between La Ronge, Reindeer Lake and Flin Flon in the search for precious metal deposits. The agreement, equally funded by the federal and Saskatchewan governments, aimed primarily at mineral exploration in gold and precious metal regions in northern Saskatchewan.[9]

Under the MDA, the Geological Survey of Canada undertook airborne surveys, and mineral deposit and regional geological studies. The provincial "Gold Belt Geology" program included geological mapping and related mineral studies. Other projects included a potash mine geology project, a compilation of potash mine data, study of the geology of the Winnipegosis and Dawson Bay Formations, and work on industrial mineral deposits.[10]

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[7] "Cameco's difficult birth," *Mining Journal*, London, 7 April 1989, Vol. 312, No. 8014, p. 1.

[8] *Ibid.*

[9] Saskatchewan Energy and Mines, *Annual Report 1988-89*, p. 14.

[10] Saskatchewan Energy and Mines, *Annual Report 1986-87*, p. 15.

Geoscience Data Assistance

Geological Mapping Data. In 1986, growing interest in gold exploration led to the announcement by the provincial Department of Energy and Mines that it would provide $100,000 for an expansion of the Geological Mapping Program aimed at increasing the level of geoscience R&D in the province.

Geological Survey Branch. The provincial Geological Survey Branch was eliminated in May 1987 as part of government downsizing.[11] Many of the activities of the Survey were transferred to branches of the Geology and Mines Division.

Infrastructure Assistance

Utilities. SaskPower and Eldorado Nuclear Ltd. reached an agreement in 1986 to build a power line from Uranium City to seven northern communities and Eldorado's Rabbit Lake mine. The $48-million project was expected to reduce the cost of power and to create social and economic opportunities for the northern communities.[12]

Resource Roads. In 1985, the Department of Highways and Transportation announced a $55-million road-building program for six separate projects. Two projects were intended to improve highways in the Rocanville/Moosomin potash mining area.

Transportation Cost Assessment. In reaction to the federal government's new National Transportation Act, the province provided funds in 1986 to the Department of Highways and Transportation to prepare an assessment of the "burden of transportation costs borne by the Saskatchewan industry" and to examine technologies to minimize those costs.[13]

Research and Development

In 1985, PCS began development of a pilot plant to make chlorine-free potash. This product was aimed at citrus and tobacco producers, major consumers of potash, whose crops are damaged by chlorine. PCS also conducted a feasibility study for a 300,000-tpy potassium sulphate plant which would use the Glasserite process. Research and development on the project had begun in 1980, and a 30,000-tpy demonstration plant was expected to begin production in August 1985.

In 1987, the provincial government worked with the Saskatchewan Potash Producers Association in developing a joint proposal for the funding of a five-year research and development program. The initiative was handled by the fiscal management branch as part of its market development and research and development incentive programs.[14]

Geochemical Research Facility. The University of Saskatchewan's Geological Sciences Department acquired an electron microprobe and an image-analysis research facility in 1989 for its geochemical laboratory. The facility analyzes satellite-recorded images identifying rock types. It can also be used to analyze extremely small samples of material. Assistance was provided under the Canada/Saskatchewan Subagreement on Advanced Technology ($150,000), and by the Natural Sciences and Engineering Research Council ($300,000) and Chevron Canada Resources ($150,000).[15]

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[11] Saskatchewan Energy and Mines, *Annual Report 1987-88*, p. 14.

[12] Saskatchewan, "News Release," 18 March 1986.

[13] Saskatchewan Energy and Mines, *Annual Report 1986-87*, p. 11.

[14] Saskatchewan Energy and Mines, *Annual Report 1987-88*, p. 13.

Integrated Gasification Combined Cycle (IGCC). Under the Action Committee on Western Canadian Low-Sulphur Coal to Ontario, Saskatchewan also participated in a $1-million study to evaluate the feasibility of constructing a commercial demonstration IGCC plant in western Canada. The process first gasifies coal and then burns the gas in a gas turbine to produce electricity. Additional electricity is produced from the waste heat from the gasifier and turbine using a steam turbine. The IGCC system is considerably more efficient than conventional coal systems and also substantially reduces particulate and acid gas emissions, hence mitigating the environmental impact of using coal.

Human Resources Assistance

Human Resource Development Initiatives. Every operating mine in northern Saskatchewan has in place a human resource development agreement, as a condition of its Surface Lease. As a result, cooperative government and industry training programs have taken place at every northern Saskatchewan mine, as well as in the exploration industry. For example, the Athabasca Employment Development Project was initiated in November 1984 to provide basic skill upgrading and other training to prepare northerners for courses at technical institutes. The program, provided jointly by the federal and provincial governments and Eldor Mines, offered northern workers an opportunity to combine employment with training to earn journeyman status. Funding for the project was provided by Employment and Immigration Canada, the Department of Indian Affairs and Northern Development and the Department of Regional Industrial Expansion.

Another agreement was signed in June 1988 by Saskatchewan Education and Key Lake Mining Corporation regarding pre-employment and on-site training programs developed by the department and the mining company. In order to generate a skilled workforce for mining in northern Saskatchewan, first priority was given to northern residents in proximity to the mine.[16]

A diamond drill helpers' course was established to help provide skilled workers for the province's mineral exploration industry. Funding came from the Canada/Saskatchewan Northern Economic Development Subsidiary Agreement; Saskatchewan Human Resources, Labour and Employment; Saskatchewan Education; and the mining industry.[17]

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[15] Saskatchewan Science and Technology, "News Release," 26 April 1989.

[16] Saskatchewan, "News Release," 14 September 1988.

[17] Saskatchewan, "News Release," 23 November 1987.

Regulation of the Mineral Industry

Land Access and Tenure

Athabasca Sand Dunes Park Land Reserve. Two thousand square kilometres on the south shore of Lake Athabasca were set aside in 1989 for Saskatchewan's first Park Land Reserve. Development in the area would be limited, but designation and boundaries had yet to be determined. After a five-year period for research and public response, the Athabasca Sand Dunes Park Land Reserve may become either a Provincial Wilderness Park or a Protected Area. In either case, the government would consider restrictions to protect the area, such as the prohibition of motorized vehicles.[18]

Mining Regulation

Mineral Resource Act. In 1985, Saskatchewan replaced its existing Mineral Resources Act with two new Acts: *The Mineral Resources Act, 1985*, and *The Crown Minerals Act*. The intent was to separate the legislative and management powers of the province over nonrenewable resources from its powers as owner of the minerals, while simplifying and consolidating existing legislation. The Crown Minerals Act contains provisions dealing with Crown ownership and disposal of mineral rights, while The Mineral Resources Act, 1985, details the province's general powers over the management, conservation and development of non-renewable resources.

Mineral Disposition Regulations. New regulations governing uranium, base and precious metals and other minerals came into effect on 8 April 1986, replacing the existing 1961 Mineral Disposition Regulations. The amendments attempted to clarify and simplify the regulations to facilitate compliance and improve understanding of general administrative procedures. The revisions included metrication. New regulations were drafted in order to provide greater security of tenure for all disposition holders. Fees were increased to reflect current money values and to discourage inactive land holdings. A schedule of fees, expenditure requirements and annual rentals was set out. The regulations also include *The Crown Mineral Royalty Schedule* (see below).[19]

Environmental Regulation

Environmental Assessment and Approvals. Approval was given to SMDC in late 1985 to develop a gold mine and mill at Star Lake, northeast of La Ronge, following completion of the environmental impact assessment process.[20]

In 1986, a report commissioned by the government regarding environmental and human health concerns concluded that the Rabbit Lake uranium mine (Eldor Mines) was not damaging the ecology, fisheries or other uses of Hidden Bay or Wollaston Lake.[21] The report evaluated the cumulative impact of ten years of mining activity in this area.

[18] Saskatchewan, "News Release," 20 July 1989.

[19] Millie Goodman, *Tax Memo: 1986 Tax Developments*, No. 72, Canadian Tax Foundation, March 1987, p. 182.

[20] Saskatchewan, "News Release," 6 January 1986.

[21] *Ibid*.

Amok Ltd. of Saskatoon received approval in 1986 from the Atomic Energy Control Board and the Department of Environment and Public Safety (DEPS) to modify its Cluff Lake mill in northern Saskatchewan. The $2.6-million modifications were designed to reprocess radioactive tailings stored in 2,916 concrete vaults. The reprocessing would reduce the level of radioactivity while extracting gold and uranium from the tailings.[22]

The Royex Gold Mining Corporation of Toronto was given approval in 1988 for its gold mining and milling project in the La Ronge Greenstone belt. The proposed mill, capable of processing 400 tonnes of ore per day, satisfied the requirements of the Environmental Assessment Act.[23] Production started in November 1988.

The construction and operation of an underground uranium test mine by Denison Mines was approved in 1988 by DEPS. The project, located northeast of Saskatoon near Wollaston Lake, was undertaken to investigate the feasibility of a full-scale mine at the site.[24]

Eldorado Resources Ltd. received approval in January 1989 for expansion of its Rabbit Lake uranium development project. The company was required to prepare a report which showed that Wollaston Lake and the surrounding areas would be protected. The projects involved mining three new orebodies using existing milling and waste-treatment systems.[25]

Transportation of Dangerous Goods. In February 1986, Saskatchewan adopted the regulations for safe transportation of dangerous goods introduced the previous year by the federal government. Under these regulations, containers and vehicles must be clearly marked and accompanied by documentation. Emergency measures must also be established, including the training of personnel in emergency procedures.[26]

Abandoned Mine Remedial Work Program. A new program to reclaim abandoned mine properties was initiated in the spring of 1988 in order to eliminate threats to the environment and public safety. With over 500 abandoned mines in Saskatchewan – many with no written records – DEPS requested public assistance in locating these mines. In 1988, 377 abandoned coal mines were identified by local communities and landowners, with reclamation completed on 22 high-priority cases. The program extended also to dump sites; an arsenic dump at Douglas Lake, for example, was cleaned up. The program continued in 1989.[27]

Pollution Prevention Regulations. DEPS presented a draft of new regulations entitled *The Pollution Prevention Regulations For The Mineral Industry*. Discussions between department and industry representatives took place during 1988 prior to the preparation of final draft legislation, which was eventually passed in 1991.

The Hazardous Substances Regulation, which came into force 1 April 1989, requires mandatory registration of ministry-approved storage facilities. Owners and operators must keep inventory records and prepare contingency plans in case of environmental emergency.[28]

[22] "Amok solves problem of radioactive waste," *The Globe and Mail*, 16 August 1986.

[23] Saskatchewan, "News Release," 13 April 1988.

[24] Saskatchewan, "News Release," 22 November 1988.

[25] Saskatchewan, "News Release," 6 January 1988.

[26] Saskatchewan, "News Release," 30 January 1986.

[27] Saskatchewan, "News Release," 31 July 1989.

[28] Saskatchewan, "News Release," 16 January 1989.

Environment and Public Safety. The investigation into a spill of 2 million litres of tailings water at Cameco's Rabbit Lake mine site was referred to the Saskatchewan Department of Justice in December 1989. The report found Cameco negligent in failing to maintain the flow alarm system on the pipeline and not ensuring employee proficiency in monitoring and visual inspections. The Minister of the Department of Environment and Public Safety, Grant Hodgins, directed ministry staff to make any necessary changes to all operating licences for mining operations in northern Saskatchewan in order to avoid additional spills. Results of water samples taken by the department showed that the spill had no impact on water quality in Collins Creek or Collins Bay.[29]

Health and Safety Regulation

Workers' Compensation Act. Saskatchewan's WC assessment rates remained among the lowest in Canada during the 1980s, and it was one of only four provinces whose future compensation liabilities were fully funded by current assessments. The 1980s began with the implementation of the Workers' Compensation Act, 1979, which introduced a number of changes from previous legislation, including a greater emphasis on rehabilitation and finding new jobs for injured workers. Amendments in 1982 and 1983 improved benefits and increased the equity in charging costs of compensation to employers.

The Ministry of Labour announced the following amendments to the Workers' Compensation Act, to take effect 1 September 1985:

- an increase in the ceiling on covered earnings to $48,000 annually;
- compensation benefits based on 90 percent of net earnings;
- higher awards for permanent impairment;
- provision of independence allowances for severe impairment;
- access to claim information for workers and employers appealing a Board decision.

Major legislative and policy changes after 1985 included

- in 1987, a new Surcharge Penalty Program to penalize firms with a high accident rate relative to their industry average;
- in 1988, a number of legislative amendments principally concerned with benefits to dependants, as recommended by the Committee of Review.

According to the March 1989 throne speech, a public review of the Occupational Health and Safety Act would be initiated, to examine the rights and obligations of employers, employees and unions.[30]

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[29] Saskatchewan, "News Release," 7 December 1989. See also, "Saskatchewan mine spill tainted," *The Globe and Mail*, 9 November 1989.

[30] "Devine wants to sell, potash, energy, insurance co's," *Public Sector*, 13 March 1989, p. 2.

Trade Initiatives

Intra-/Interprovincial Marketing

Potash and Phosphate Institute of Canada (PPIC). The head office of the PPIC, a market-promotion association of potash producers, was moved to Saskatoon from Toronto on 29 April 1986. The move to Saskatchewan, one of the world's largest producers of potash, was linked to provincial government support for the marketing of Saskatchewan potash and the strong provincial role in potash mining. PPIC is an affiliate of the Potash and Phosphate Institute of Atlanta.[31]

International Trade

U.S. Trade Barriers: Canadian Potash. In 1987, the U.S. Department of Commerce made a preliminary finding that Canadian potash producers were undercutting their U.S. counterparts, after a petition was filed by owners of two struggling New Mexico potash mines. On 23 March 1987 the U.S. International Trade Commission made a preliminary determination that there was a "reasonable indication" that the U.S. potash industry was materially injured by imports of potassium chloride from Canada, allegedly sold at less than fair value (LTFV). This determination was based on the poor performance of the domestic industry, the high level of market penetration by Canadian imports, and the adverse affect of these imports on the prices of domestically produced potash. The Commerce Department's preliminary finding assessed dumping duties against Canadian potash producers ranging from 9 percent to 85 percent. This assessment came as a shock to Canadian producers, who argued that comparative disadvantage, not LTFV competition, was at the root of the U.S. industry's difficulties.[32]

In September, the Saskatchewan government reacted to the duties by introducing legislation which would allow the province to control potash production and hence raise prices by a system of prorationing of production levels.[33] Bill 36, *The Potash Resources Act*, gave the Saskatchewan government the authority to control potash production volumes in every mine in the province. Producers reduced production volume without waiting for the province to impose restriction. The subsequent reductions in Saskatchewan potash production were successful in driving up world prices.[34] PCS, for example, raised its prices to the United States by 60 percent. However, Saskatchewan was supplying more than 80 percent of U.S. needs, and U.S. farmers responded by joining Canadian producers in lobbying to reduce the impact of the potash dumping duties.[35]

By December, negotiations were underway between Canadian potash producers and the U.S. Department of Commerce. The United States suspended its investigation into the dumping charge and provided a 30-day period to reach a settlement.[36] Canadian producers offered to stop shipping potash at prices which would undercut U.S. producers. The Canadian companies involved in the negotiations included the Potash Corp. of Saskatchewan, Kalium

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[31] Saskatchewan, "News Release," 6 March 1986, and 29 April 1986.

[32] Haglund, David G. and Alex von Bredow, *U.S. Trade Barriers and Canadian Minerals: Copper, Potash and Uranium*, Centre for Resource Studies, Queen's University, Kingston, 1990, pp. 72-74.

[33] "Saskatchewan potash bill sets $1 million fine," *The Globe and Mail*, 2 September 1987.

[34] *Ibid.*

[35] "U.S. urged to ease potash duty," *The Toronto Star*, 18 September 1987, p. F8.

[36] "Potash dumping case suspended," *The Leader-Post*, 11 December 1987, p. A1.

Chemical Co., Potash Company of America, Central Canada Potash and International Minerals and Chemical Corp.[37]

Early in 1988, eight potash producers signed an agreement with the U.S. Department of Commerce. The agreement allowed the Department of Commerce to set a minimum price for potash sold in that country. The agreement expires in January 1993.

The September 1987 legislation was never implemented, but could still be activated by a cabinet ruling.[38]

U.S. Trade Barriers: Uranium. In 1986, a U.S. District Court ordered the Department of Energy to stop enriching foreign-sourced uranium for use by U.S. utilities by 1987. The effect of the ruling posed a serious threat to Saskatchewan's uranium industry which sold 40 percent of its production (6.7 million pounds) in 1986 to the United States in unprocessed form. The issue was resolved in 1988 with the signing of the Free Trade Agreement which prohibited further enrichment embargoes directed against Canada.

Pacific Rim Trade. Efforts were made throughout the 1980s to diversify the province's trading partners and promote trade with the Pacific Rim. In 1986, for example, the provincial government granted $100,000 to the Asia Pacific Foundation of Canada, established in 1984 to increase understanding and strengthen economic and cultural ties between Canada and the Asian Pacific Rim. The Pacific Rim provides a significant market for Saskatchewan exports.

In 1985, the Saskatchewan Mining Development Corporation and Eldorado Nuclear signed a joint long-term uranium sales contract with Japan's fourth largest electrical utility, Kyushu Electric Power Corporation. The contract called for the delivery of 3,000 short tons of U_3O_8 over a thirteen-year period from 1987 to 1999.

In 1987, SMDC announced a ten-year agreement to sell approximately 750 thousand pounds of uranium per annum to Korea. Korea Electric Power Corporation also acquired a two percent non-voting interest in the Cigar Lake uranium projects for $8 million.[39]

While on a trade mission to Japan, the Premier announced the sale of six million pounds of Saskatchewan uranium to Chubu Electric Power Company, the third largest power company in Japan. The sale, negotiated through Cameco, will continue over a ten-year period from 1992 to 2001 and is worth between $150 to $200 million. Because of its long-term interest in uranium supply, Chubu Electric agreed to pay about $25 a pound, which was double the spot price at the time. At the time of the sale, Japan had 32 nuclear power stations, and plans for 68 by 2010.[40]

During his trade mission, the Premier also pointed out that the Canada-U.S. Free Trade Agreement would provide excellent investment opportunities for Japan in Saskatchewan, providing access to the U.S. market.[41]

[37] "Canadian potash producers agree to review prices," *The Toronto Star*, 14 December 1987, C2.

[38] "Sale of Potash Corp. stock involves risk," *The Globe and Mail*, 3 October 1987.

[39] Saskatchewan, "News Release," 28 August 1987.

[40] Saskatchewan, "News Release," 14 February 1989.

[41] *Ibid.*

Taxation Matters Affecting the Industry

General Taxation

The 10 April 1985 budget announced Bill 44 which amended the *Venture Capital Tax Credit Act*. The Act, which received Royal Assent on 11 June 1985, clarified and altered the debt obligations of venture capital corporations under specified conditions. The following May, the program was altered under Bill 16 to expand the list of eligible businesses. For 1988-89, the province instituted a limit to assistance provided under the program.

The *Stock Savings Tax Credit Act* (Bill 41) received Royal Assent on 13 June 1986. The bill set out rules for the Stock Savings Plan (SSP) which was established to encourage the public to make equity investments in public companies which conduct most of their business in Saskatchewan. The *Stock Savings Tax Credit Regulations* were amended in November 1986, clarifying that eligible mining flow-through shares would qualify as prescribed securities. In 1989, the SSP was extended for an additional two years, to 30 June 1991. Along with other amendments, a $3,000-yearly investment limit was imposed on large corporations (with more than $50 million in assets) to encourage investment in emerging and expanding companies. The Stock Savings Tax Credit Regulations were also amended to prevent abuse of the program.

The *Labour-Sponsored Venture Capital Corporation Act* (Bill 52) was passed in 1986 to permit the formation of labour-sponsored venture capital corporations. The Act was not implemented until 11 May 1988.

In the March 1986 budget, the general corporate income tax was increased from 16 percent to 17 percent. A two-year provincial corporate income tax holiday was provided for eligible Canadian-controlled private corporations incorporated after 26 March 1986 and before 27 March 1988.

The corporate capital tax rate was increased from 0.3 percent to 0.5 percent in 1986. The amended *Corporation Capital Tax Act* (Bill 26) received Royal Assent 2 July 1986. The 0.5 percent tax was extended to apply to federal commercial Crown corporations, effective 1 July 1988. Large resource corporations were assessed a surcharge equal to 2 percent of the corporation's value of Saskatchewan resource sales. Under Bill 70, definitions were amended in the Corporation Capital Tax Act which received Royal Assent 28 June 1988, to ensure that resource corporations would be considered subject to regular corporation capital tax.

The 17 June 1987 budget announced that, effective 22 June, a tax of 7 cents per litre would be applied to gasoline, diesel and aviation fuels and propane. The tax on locomotive diesel fuel was increased from 13.6 cents to 15 cents per litre.

The 30 March 1989 budget announced that a tax on environmentally harmful products would be forthcoming.

Mining Taxation

In 1985, the falling demand for potash in developing countries and low prices in the North American market, combined with significant increases in productive capacity, led the Saskatchewan government to take several steps. *The Potash Resource Payment Agreements* were extended. The province committed $5 million for each of the next two years to provide tax incentives for market development and research in order to stimulate potash demand. At the same time, potash companies were required to pay the provincial corporate capital tax (not a profit-based tax), which generated an additional $3.5 million in annual tax revenue.

In 1986, revisions to the mineral disposition regulations included amendments to the *Crown mineral royalties* (which applied to all minerals except uranium). The royalty amendments provided accelerated write-off provisions for capital assets and included a provision for claiming some historical exploration expenditures. *The Crown Mineral Royalty Schedule* was also put into effect. The Schedule (part of the *Mineral Industry Recovery Program*) continued provisions for payment of quarterly royalties of 12.5 percent of net profit on Crown minerals other than uranium. (Uranium royalties were 3 percent of gross sales.) New exploration expenditures continued to receive a 35 percent tax credit against graduated royalties.[42]

In 1988, the policy section of the Energy Branch of Saskatchewan Energy and Mines reviewed coal royalties and taxes. The review included an evaluation of the existing system, current market trends, and future opportunities and constraints. The *Coal Disposition Amendment Regulations* were issued, effective 8 July 1988, regulating the granting of permits and leases and other administrative functions, and permitting certain deductions from royalty payments made on sales of coal extracted from leased Crown land.[43] In uranium, the basic royalty of 3 percent of the producer's gross uranium sales was increased to 5 percent in 1988.

Potash Production Tax. A new provincial potash tax system was announced 6 July 1989. The new legislation, effective January 1990, replaced the old *Potash Resource Payment Agreements* which had been in place since 1979. The government stated that its goal in introducing the new tax system was to provide a stable fiscal environment that would encourage industry growth and stability. Under the new regime, potash companies are required to make a base payment per tonne of product sold plus a graduated profit tax. Tax credits of $5 million per year to promote research and development and market development in the mineral industry were continued. Expansions are eligible for a depreciation rate of 35 percent; capital investment in environmental protection has an even higher depreciation rate of 50 percent.[44]

[42] Millie Goodman, *Tax Memo: 1986 Tax Developments*, No. 72, Canadian Tax Foundation, March 1987, p. 182.

[43] Saskatchewan Energy and Mines, *Annual Report 1988-1989*, p. 9 and p. 12.

[44] Saskatchewan, "News Release," 6 July 1989.

8. Manitoba

Introduction

Industry Trends

> Nickel, copper and zinc are the major metallic minerals produced in the province. Mining provides direct employment to 4,500 people in Manitoba and constitutes the principal economic base for several northern communities. Next to agriculture, mining is the leading primary resource sector. In the later years of the 1980s, the total value of mineral production averaged $1.2 billion per year.[1]

Low base-metal prices and declining ore reserves in 1985 and 1986 were sources of considerable concern for the province's northern resource-dependent communities. Particularly affected were the communities of Flin Flon, Leaf Rapids, Lynn Lake, Snow Lake and Thompson.[2] Mining operations are primarily located in the Flin Flon-Snow Lake, Lynn Lake-Leaf Rapids, and Thompson and Bernic Lake areas.

Mineral exploration activity was high during 1985-86, particularly in the province's junior mining sector. Exploration was stimulated by the federal government's flow-through share financing scheme, strong gold prices, and encouraging exploration results in gold and base metals. In 1986, Sherritt Gordon opened the first gold mine in Manitoba since 1949. The new MacLellan gold mine (operated by SherrGold Inc.) near Lynn Lake was expected to provide the community with economic opportunities after Sherritt's Fox copper mine closed earlier in the year.

By 1987, the fortunes of the industry had improved considerably with record highs in mineral production values, and metal production volumes up by 42 percent.[3] The mining industry led the province's economic growth in 1988.[4]

Exploration interest began to shift towards base metals in 1989, while overall exploration levels dropped about 17 percent from the previous year. Exploration interest in gold plummeted in response to lower gold prices, the cutback of the federal flow-through-share program, and the closure of the province's three gold mines due to high production costs and low gold prices.[5]

Highlights of Government Initiatives

One of the major concerns of Manitoba Energy and Mines in the 1985-89 period was the plight of mining communities faced by major layoffs or shutdowns. The main vehicle of government assistance during this period was the Mining Community Reserve. The 1984-89 Canada/Manitoba Mineral Development Agreement (MDA) completed many projects which were expected to help protect jobs and preserve mining communities by supporting the exploration and mining industries. Special *ad hoc* assistance was given to Sherritt Gordon and the town of Lynn Lake.

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[1] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*, p. 3.7. See also, Manitoba Round Table on Environment and Economy, *Workbook on Minerals*, 1991.

[2] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1986*, Mineral Report 35, p. 35.

[3] Manitoba Finance, *The Manitoba Budget Address 1988*, 26 February 1988, Economic Review, p. 24.

[4] Manitoba Culture, Heritage and Recreation, *Manitoba Facts '89*.

[5] Manitoba Energy and Mines, *Mineral Exploration in Manitoba – 1990*, March 1991.

The latter half of the decade brought a change of leadership with the defeat of the New Democratic Party budget in March 1988. The new Conservative government cancelled a number of measures proposed by the previous administration and replaced them with other initiatives. A proposed Mining Development Fund was cancelled; a more limited set of mining tax increases were introduced; and the *Mining Act* underwent an extensive review. The Mining Community Reserve was continued, and negotiations were underway for a new mineral development agreement.

Crown Corporations, Direct Investment/Equity Participation

Manitoba Potash Corporation. The government of Manitoba and Canamax Resources signed a letter of intent in 1985 committing both parties to undertake joint and separate feasibility studies on the potash deposits in the Russell-Binscarth area of southwestern Manitoba. In April 1986 a Co-ownership and Development Agreement set up the Manitoba Potash Corporation to develop the deposits. Manitoba had a 49 percent interest in the project, and Canamax held the remaining 51 percent. Land acquisition began, and extensive studies were undertaken, including comprehensive seismic analyses, metallurgical deposit testing, site evaluation, market analyses, and detailed engineering activities.[6] Costs over five years to bring the mine into production were estimated at $467 million.[7] A technical and economic study (released August 1987) confirmed the feasibility of establishing a full-scale potash mine. The provincial government anticipated good market opportunities for the output of the proposed mine.[8]

The proposed development of the potash deposit in Manitoba resulted in strained relations with Saskatchewan, as the latter's potash industry was operating at only 70 percent capacity due to world oversupply. Saskatchewan claimed that a new mine in Manitoba would not be economically viable and that it would damage existing Canadian producers. Since Saskatchewan's mine and transportation infrastructure was already established, the province argued that it was in a better position than Manitoba to cope with low world prices.[9]

Manitoba Mineral Resources. The provincial Crown corporation signed an agreement in 1988 with Hudson Bay Mining and Smelting Co. Limited to invest $9.7 million in return for a 49 percent share of a proposed copper/zinc mine. The new Callinan mine at Flin Flon was expected to produce 510,000 tonnes of copper and zinc ore per year and some small quantities of silver and gold.[10] In 1989, Manitoba Mineral Resources sold its rights to the Callinan mine to Hudson Bay Mining and Smelting.

The Tantalum Mining Corporation (Tanco). Jointly owned by the Province of Manitoba (25 percent), Hudson Bay Mining and Smelting (37.5 percent) and Cabot Corporation (37.5 percent), Tanco announced in 1985 the construction of a new spodumene (lithium) processing plant at its Bernic Lake tantalum mine site (near Lac du Bonne). The mine had shut down in 1982 due to poor market conditions for tantalum. The plant would produce ceramic-grade spodumene concentrate from the Bernic Lake ore. A pilot plant had been in operation since mid-1984, funded by a $480,000 grant under the federal Enterprise Development Program. The new spodumene processing plant cost $6.4 million.[11] In August 1988, the Bernic Lake mine reopened and began production of both tantalum and spodumene.

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[6] Manitoba Finance, *The Manitoba Budget Address 1986*, 22 May 1986, p. B8.

[7] "Indian Potash Deal," *Mining Magazine*, April 1986, p. 295.

[8] Manitoba Energy and Mines, *Annual Report 1987-88*.

[9] "Ash kicking," *Western Report*, 28 April 1986, p. 9.

[10] "HB Mining," *The Globe and Mail*, 15 March 1988. See also, "Hudson Bay to mine Callinan ground in '89," *The Northern Miner*, 21 March 1988, p. 1.

Assistance Initiatives

Direct Assistance/Grants and Subsidies

Mining Communities. By mid-decade, Manitoba mining communities were suffering from depressed mineral markets. A number of government initiatives were introduced to help the communities. In 1985, the government of Manitoba agreed to lend $10 million to Sherritt Gordon Mines Ltd. so that it could proceed with a $27-million deep ore development project at its Ruttan Mine near Leaf Rapids, a planned community built by the province specifically for mining operations in the area. The $10-million loan was repayable in equal instalments over five years. The project was expected to extend the life of the mine until 1992, increase its output capacity, and allow the company to add 200 employees, bringing the total workforce close to 500.

The provincial government provided a $2-million loan to a Sherritt Gordon subsidiary (SherrGold) to help open up the new MacLellan Mine and create new businesses in the Lynn Lake area. It was hoped that the new operation would ensure some continued survival of the town of Lynn Lake, which had been devastated by the October 1985 closure of Sherritt's Fox mine. The loan was to be repaid out of mining profits to the Northwest Manitoba Development Fund. The Fund was never formally established, however, because the MacLellan mine never became profitable. SherrGold also received a $4-million grant from the federal government.

In September 1986, the Manitoba government provided a $55,000 grant directly to the Local Government District of Lynn Lake. The funds came from the Mining Community Reserve to help cover the shortfall in municipal taxes resulting from a number of factors, including the closure of the Fox Mine.[12]

By 1989, LynnGold Resources Ltd. (which had acquired the mine from SherrGold) filed for bankruptcy and announced the closure of the MacLellan Mine, after losing about $7 million a year as gold prices continued to fall. With accumulated liability of approximately $25 million, a new provincial offer of $24 million in aid was rejected. Under the $1.6-million *Mobility Assistance Program*, laid-off miners were assisted, and each applicant was allowed up to $10,000 to help relocate. LynnGold's was the third mine to close in Manitoba in 1989. In December 1989, the province gave Lynn Lake a further $242,000 to cover lost tax revenues.[13]

Canada/Manitoba Mineral Development Agreement (MDA). The $24.7-million, five-year MDA ended in 1989. Many of the MDA projects focused on analysis and dissemination of data in the Lynn Lake-Ruttan and Flin Flon-Snow Lake districts in hopes of prolonging the life of the mines and dependent communities in these areas. Other initiatives concentrated on developing a broader understanding of Manitoba's geology and undertaking geoscientific and technological activities.[14] Numerous studies were undertaken during the course of the agreement, including geoscientific activities, market and economic development studies, an examination of the modernization of the copper/zinc processing facilities at Flin Flon, resource inventory studies, computer software mapping projects, the collection and interpretation of geophysical exploration data, and mine safety and productivity projects.[15]

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[11] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1986*, p. 3.6.

[12] Manitoba Information Services, "News Service," 19 September 1986.

[13] *The Globe and Mail*, 23 December 1989, A7. See also, "Mine bail-out fails," *The Winnipeg Free Press*, 26 October 1989 and 13 December 1989.

The Manitoba MDA had a significant technology component. Research in mining techniques under the MDA program including the following projects:

- Hudson Bay Mining and Smelting (HBM&S) and Sherritt Gordon experimented with recovering base metals in underground mines by *in situ* leaching.
- In an effort to improve mine safety, Inco examined the application of rocket-launching techniques to release hang-ups in stopes and ore passes. A two-year study was also initiated to examine non-destructive testing for mine hoist ropes.
- At the HBM&S Ruttan copper and zinc mine, an underground radio and computer system was installed.
- The Ministry of Energy and Mines examined applications for computer software in mine design.

Other studies included the recovery of waste heat from compressor cooling water,[16] abandoned mine tailings and overburden stabilization studies, and benchscale testing of hydrometallurgical processes for recovery of copper, zinc and precious metals. Environment-related research examined problems related to sulphur dioxide emissions at Inco's Thompson operations, nickel losses to tailings, and an energy balance problem in the smelter. Studies were underway to examine methods of containing sulphur[17] so as to meet or exceed targets established in the provincial government's control order governing SO_2 emissions.

Geoscience Data Assistance

Geoscience data-gathering activities in the Lynn Lake and Flin Flon-Snow Lake areas were boosted by funds provided under the MDA. Geological mapping programs and mineral deposit studies were conducted at Rice Lake, Bissett, Thompson, Cross Lake, Red Sucker Lake, Pipestone Lake, Gods Lake, and Island Lake. Some support was also given to various industrial mineral resources projects.[18]

Regulation of the Mineral Industry

Land Access and Tenure

***Surface Rights Act*.** In 1985, responsibility for the Surface Rights Act was transferred from the Minister of Energy and Mines to the Minister of Municipal Affairs. Since 1983, disputes between mineral rights holders and landowners had been adjudicated by the Surface Rights Board, which included members from the communities affected. However, because the Board reported to the Minister of Energy and Mines, there was a public perception that it was not neutral. Shifting the Surface Rights Act to the jurisdiction of the Minister of Municipal Affairs was expected to end criticism of the Board's objectivity.

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[14] Canada/Manitoba, *Canada-Manitoba Mineral Development Agreement: Fourth Annual Report 1987-88*, 1988, p. 3.

[15] Manitoba Energy and Mines, *Annual Report 1988-89*.

[16] "Missiles for mines," *The Northern Miner Magazine*, October 1987. See also, "Inco to test mine hoist rope under Canada-Manitoba Agreement," *The Thompson Citizen*, 17 August 1987.

[17] "New SO_2 regulation poses challenge for Inco," *The Thompson Citizen*, 20 May 1988.

[18] Manitoba Culture, Heritage and Recreation, *Manitoba Facts '87*, p. 34.

The Northern Flood Agreement (NFA). Signed in December 1977 after about 528,000 acres of land in northern Manitoba were flooded as part of a large-scale initiative to increase hydroelectric power, the NFA recognized that five Aboriginal communities were adversely affected by environmental changes caused by the flooding. A major purpose of the agreement was to ensure that northern residents have a continuously available supply of potable water.

Particularly relevant to the mineral industry, however, was an article in the agreement whereby the province agreed to transfer four acres of provincial Crown land to Canada for the use of the Indian Bands for every acre of land affected by the flooding (Article 3). Manitoba agreed to set aside a "hold area" for land selection for each band for a period of five years, allowing the Bands exclusive use of the land and preventing exploration or staking on it (Article 4). In November 1988, a federal negotiator for the NFA was appointed to "accelerate the implementation of the Agreement," which had taken much longer than the five years envisioned in 1977. Land use and the environment were two of the leading agenda items.[19] By the end of the decade, discussions were continuing and no significant settlements had been signed.

Mining Regulation

Mines Act. A new Mines Act was proposed in 1989 to replace The Industrial Minerals Drilling Act, The Mineral Exploration Assistance Act, and The Mines and Natural Resources Department Act,[20] legislation that had been in effect for sixty years. The goal of the Act was to "encourage and facilitate mineral resource development..."[21] Among the proposed changes were improved environmental safeguards; a formal environmental review was proposed, as well as a fund that would provide for reclamation work following mine closure. The new Act would also include the establishment of a mineral research and advisory council (consisting of public and industry representatives), the appointment of an independent chairperson to the Mining Board, and provisions to streamline legislation. At the end of the year, consultations regarding the Act were still in progress.

Environmental Regulation

The Manitoba Hazardous Waste Management Corporation (a Crown corporation) was formed in 1986 to ensure that adequate facilities were established to handle wastes and that procedures are in place to protect the public and the environment.[22]

[19] Department of Indian Affairs and Northern Development, *Communiqué*, 7 November 1988, 8817.

[20] Manitoba Energy and Mines, "Green Paper on a New Mines Act," July 1989. See also, "Mine tax considered," *The Winnipeg Free Press*, 19 September 1989.

[21] Manitoba Energy and Mines, "Green Paper on a New Mines Act," July 1989.

[22] Manitoba Information Services, "News Service," 27 June 1986.

Manitoba/Minnesota/North Dakota "Statement of Co-operation". A "Statement of Co-operation" was signed by Manitoba, Minnesota and North Dakota to prevent the establishment of a United States nuclear waste repository in the Red River Drainage Basin. Manitoba was concerned because the basin draws into Lake Winnipeg, which supplies water to 60 percent of the provincial population. The Minister of Environment and Workplace Safety and Health presented the Manitoba position at the U.S. Department of Energy public hearing in Minnesota.[23] Participants in the "Statement of Co-operation" continued to share information and monitor the situation into the 1990s. The Statement strengthened the framework for consultation between state and provincial governments on the [illegible] of radioactive waste disposal and underlined their commitment to [illegible] consideration of disposal sites in Minnesota or Manitoba.[24]

Acid Rain Abatement Agreement. Manitoba is Canada's third largest producer of sulphur dioxide, after Ontario and Quebec.[25] A 1985 federal/provincial agreement-in-principle required Manitoba's sulphur dioxide emissions to be reduced by 25 percent (55,000 tonnes) by 31 December 1994. All the provinces east of Saskatchewan participated in the agreement, which was signed by Canada and Manitoba on 10 April 1985. Smelters in Flin Flon (Hudson Bay Mining and Smelting Co. Limited) and Thompson (Inco Ltd.) are responsible for 95 percent of the province's sulphur dioxide emissions.

By the end of the decade, negotiations were under way between HBM&S and the federal and Manitoba governments over sharing the costs of modernizing the Flin Flon smelter, to enable the company to comply with the emission standards. HBM&S requested $43 million in loans from the federal and provincial governments to help finance the refurbishing of its aging smelting and zinc-refining facilities in Flin Flon.[26]

In March 1988, it was announced that the provincial government had required Inco to reduce its annual sulphur dioxide emissions to 220 kilotonnes by 1994.

Department of Fisheries Environmental Study: HBM&S. A 1987 study on the environmental impact of cadmium, zinc and copper emissions from the HBM&S plant at Flin Flon determined that aquatic life was threatened in Manitoba's northern lakes. The study, administered by a scientist from the Freshwater Institute of the Department of Fisheries, suggested that aquatic life would be killed unless the smelter reduces its emissions. Recovery could take ten years after emissions were eliminated.[27]

Environmental Assessment: Consolidated Professor Mines. An interprovincial environmental dispute arose concerning a proposal to open a new gold mine at Shoal Lake, Ontario. Shoal Lake, which also draws into Lake Winnipeg, is the site of numerous mining exploration projects as well as abandoned mines and tailings. One junior mining company, Consolidated Professor Mines, submitted initial environmental applications to develop its Duport gold mine on Stevens Island. Residents of Winnipeg lobbied to prevent the establishment of the mine, fearing that development of the mine would contaminate their drinking water. The premiers of the two provinces met in 1989 to discuss the Shoal Lake situation. Ontario subsequently designated the mine as the first to be reviewed under its new *Environmental Assessment Act*.[28]

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[23] Manitoba Information Services, 21 February and 7 March 1986.

[24] Manitoba-Minnesota-North Dakota Statement of Co-Operation Relating to the Issue of Potential High-Level Radioactive Waste Repository Sites, 17 February 1986.

[25] "Acid Rain Deal," *Canadian Press*, 10 April 1987. See also, "Manitoba to reduce sulphur dioxide emissions by 25 percent by 1994," *The Thompson Citizen*, 15 April 1987.

[26] "Ottawa will aid controversial mine mill, firm says," *The Globe and Mail*, 4 May 1989.

[27] "Smelter in Flin Flon killing aquatic life, federal official says," *The Globe and Mail*, 21 April 1987, p. A11.

[28] "Shoal Lake fight shaping up," *The Northern Miner*, 28 August 1989, p. 2.

Manitoba Round Table on Environment and Economy. The Manitoba government acted on the recommendations of the National Task Force on the Environment and Economy to establish the Manitoba Round Table on Environment and Economy in October 1988. In the area of minerals, the Round Table recognized the need to encourage mineral development activities which are practised in an environmentally sound manner.

Mine Environment Neutral Drainage (MEND). Manitoba participated in the MEND project along with the federal agency CANMET, the Canadian mining industry, Environment Canada, British Columbia, Ontario, Québec and New Brunswick. The MEND program was launched in 1988 to find solutions for the prevention and control of acid mine drainage.[29]

Sustainable Development. In 1989, the province hosted an *International Conference on Sustainable Development.*[30] An *International Centre on Sustainable Development* was subsequently established in Winnipeg.

Environmental Protection. In 1989, recognizing the growth of activity in the environmental area, the government increased the funding of the Manitoba Department of Environment by 10.6 percent, and its mandate was broadened under a new *Environment Act.*[31]

Health and Safety Regulation

Workplace Health Regulation. The provincial government proceeded in 1986 with implementation of the Workplace Health Regulation, a system based on the principles of assessment, evaluation and control. Under the Regulation, employers are required to ensure that all hazardous materials used in their operations are listed, with information provided about the possible effects of such materials. They must also set up an effective environmental monitoring program.

Other regulations included a *Code of Practice Respecting Asbestos*, a revised mines regulation, and a revised regulation concerning health and safety committees. These initiatives were funded through the *Manitoba Jobs Fund.*[32]

Workers' Compensation (WC). The funding position in Manitoba deteriorated steadily over the decade, from a situation in 1980 where the WC fund was 128.9 percent funded for long-term liabilities, to 1988 when it was only 52.7 percent funded. Benefit calculations continue to be based on 75 percent of gross earnings at the time of injury or accident. A review of the Merit Rebate and Special Additional Assessment programs was completed in 1984, and recommended a re-evaluation of the limited-experience rating system which was then in operation.

A major review of the WC system in 1986 resulted in 178 recommendations, many of which were implemented in 1989. In 1990, Bill 56 was passed by the provincial legislature, effecting a number of structural changes to the Workers' Compensation Board.

[29] Energy, Mines and Resources Canada, *CANMET: Annual Report, 1988-89*, p. 15.

[30] Manitoba, *Speech from the Throne*, The Hon. George Johnson, Lieutenant-Governor of the Province of Manitoba, 18 May 1989.

[31] Manitoba, *The 1989 Manitoba Budget*, 5 June 1989, p. 11.

[32] Manitoba Information Services, "News Service," 18 July 1986.

Over the period 1985-89, the assessment rate for mining increased from $3.14 per $100 of payroll to a peak of $6.10 in 1988, dropping back to $5.58 in 1989. Total assessments for mining rose from about $4 million to almost $10 million over the period.

Highlights of the 1985-89 changes:

- 1985: A major review of the Workers' Compensation Act was announced in May.
- 1986: A review of the employer classification system was completed, and a discussion paper regarding experience rating was released.
- 1989: Bill 46 was passed, introducing measures to implement an experience rating program. Benefit entitlements to claimants were also increased.
- 1989: WC coverage for all workers in the construction, logging and transportation industries was introduced.

Trade Initiatives

International Trade

A North Dakota/Manitoba Co-ordinating Commission was established, with the first formal meeting held in September. The two governments share many concerns, such as trade, water, agriculture, tourism and transportation. One example of co-operation between the two governments was the campaign (see above) against the establishment of a nuclear waste site in the Red River Basin.[33]

Canada-United States Free Trade Agreement. In August 1988, the new Conservative administration voiced its support for the Canada-U.S. Free Trade Agreement. It also announced that the Manitoba Mining Association had agreed to work with provincial governments to suggest changes to the federal-provincial tax allocation rules.[34] In 1989, the government allocated $30 million in growth capital to stimulate Manitoba businesses and help them compete in the new trade environment.[35]

Taxation Matters Affecting the Industry

General Taxation

The Manufacturing Investment Tax Credit, introduced in 1984, was extended to the end of 1986. Eligible investments in new buildings, machinery and equipment made in Manitoba could qualify for the 6 percent credit.

The May 1986 Budget announced that the large business corporate income tax rate would be boosted from 16 percent to 17 percent. The corporate capital tax for large corporations (with capital in excess of $1 million) increased from 0.2 percent to 0.3 percent, the same rate as in Ontario.

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[33] Manitoba Information Services, "North Dakota-Manitoba Coordination Underway," 1 August 1986.

[34] Manitoba, *The 1988 Manitoba Budget*, 8 August 1988, pp. 5 and 18.

[35] Manitoba, *The 1989 Manitoba Budget*, p. 12.

The March 1987 budget announced the imposition of a capital tax surcharge of 0.2 percent on corporations with more than $10 million in taxable paid-up capital, and an increase in the payroll tax of 0.75 percent, effective April 1.

Mining companies objected to the 1987 tax increases; the payroll tax alone cost Inco Ltd. an extra $500,000 per year. Industry representatives pointed out that, since prices are beyond industry control, the extra costs imposed by the taxes would result in lower employment levels.[36]

Manitobans were given two provincial budgets in 1988, one in February by the outgoing NDP government, and one in August by the new Progressive Conservative Party administration.[37] None of the tax changes announced in the February budget was implemented.

In 1989, following a commitment announced in the August budget to consult with the mining industry about the allocation of corporate income taxes, the government stated that it would implement a new system of consultation. In June 1989, an interim tax measure was announced, imposing a special 1.5 percent *Mining Tax* for 1989.[38]

In the June 1989 budget, the payroll tax exemption was raised for employers with payrolls up to $600,000 (from the previous $300,000) while those employers with payrolls between $600,000 and $1,200,000 would pay a reduced rate.

Discussions were underway on a proposed Environmental Protection Tax system in 1989. As part of the government's environmental initiatives, tax preference for gasohol produced in Manitoba was increased to 3.5 cents (from 2.5 cents) per litre. Initial measures were also put in place to encourage effective recycling of beverage containers.[39]

The *Water Power Act* was amended several times between 1985 and 1989 to increase the rental rates. In 1985, water power rental rates rose from $3.25 to $4.75 per horsepower-year; installed capacity rates were increased from $1.30 to $1.90 per installed horsepower-year. The rates were further increased in 1986 by $7.00 to $11.75 per horsepower-year of output. In 1987, it was announced that water power rental rates were to be reduced from $11.75 per horsepower-year of output to $8.96. In 1989, the rates were increased to $9.90 per horsepower-year.

Mining Taxation

The *Statute Law Amendment* (Bill 65) received Royal Assent on 11 July 1985, amending the *Mining Tax Act* and changing definitions of various expenses and assets.

The Statute Law Amendment (Bill 19) altered The Mining Tax Act in 1986 to clarify rules governing concerns such as the deductibility of exploration expenses and depreciable assets.[40]

The February 1988 budget, which included several changes to mineral taxes, was defeated. Many of the proposed measures were altered in the new administration's succeeding budget, presented in August. The changes proposed in February and the results in the August budget were as follows.

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[36] "New budget will hurt Manitoba's mining industry with new taxes," *The Thompson Citizen*, 23 March 1987.

[37] Manitoba Finance, *The Manitoba Budget Address 1988*, 26 February 1988, and Manitoba, *The 1988 Manitoba Budget*, 8 August 1988.

[38] Manitoba, *The 1989 Manitoba Budget*, p. 20.

[39] *Ibid.*, pp. 19-22.

[40] Millie Goodman, *Tax Memo: 1986 Tax Developments*, Canadian Tax Foundation, No. 72, March 1987, p. 170.

- The general mining tax rate was increased in the February budget from 18 percent to 20 percent. This remained unchanged in August.
- The investment tax credit was to be rescinded. This remained unchanged in August.
- A refundable 7 percent tax on mining profits was proposed in February but withdrawn by the new government. Five percent of the mining taxes was to go to the Mining Development Fund, a measure which was not followed through by the new administration.[41]
- The February budget announced the termination of the Mining Community Reserve; this decision was overturned in the August budget.
- The new administration resolved in August that mining tax reassessments would be limited to every six years. It also proposed that R&D expenses incurred for developing alternative uses for products that had been mined would be deductible for tax purposes.[42]

Bill 86, the Statute Law Amendment (Taxation Act) 1989, received Royal Assent 8 December 1989. This legislation amended part 4 of the Mining Tax Act. Among other measures, the special, temporary mining tax of 1.5 percent of the profits of the mine operator was imposed for 1989 (see previous section).

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[41] Manitoba Finance, *The Manitoba Budget Address 1988*, 26 February 1988.

[42] Manitoba, *The 1988 Manitoba Budget*, 8 August 1988, Taxation Adjustments, p. 2.

9. Ontario

Introduction

Industry Trends

> Ontario accounts for one-third of total Canadian mineral production: two-thirds of Canada's nickel and salt, almost half its gold, a third of its sand and gravel, cement, copper and uranium, and over a quarter of its silver and zinc. Although four minerals – gold, nickel, copper and uranium – constitute over half the value of Ontario's production, the province's mining industry produces over 30 different minerals, including iron ore and several other metals, gemstones, salt, sulphur and structural materials. During the late 1980s, approximately 85,000 people were employed in production of minerals and metals. The value of Ontario's mineral production rose steadily from $4.56 billion in 1985 to $7.3 billion in 1989.[1]

Between 1985 and 1989 exploration activities focused predominantly on gold, a cause of concern for some because Ontario's base metal reserves were at an all-time low.[2] Gold exploration peaked in 1987 and 1988, then plummeted in 1989, reflecting changes in federal flow-through share programs, the aftermath of the 1987 stock market crash, lower gold prices, and decreased activities by junior mining companies.

Gold and nickel dominated the province's mineral activity during this period. Three gold mines came into production in the enormous new Hemlo district in 1985. Base metal activity included the re-opening of Inco's Crean Hill nickel mine in 1987. In 1988, Minnova Inc.'s Winston Lake zinc mine opened, the province's first new base metal mine since 1980.

The iron ore industry in Ontario suffered during the latter half of the 1980s. The Griffith iron ore mine near Ear Falls closed permanently in March 1986, and Dofasco Inc. announced in March 1989 the impending closure of the Adams Mine at Kirkland Lake and the Sherman Mine in Temagami.[3]

Highlights of Government Initiatives

The Ontario government introduced many legislative and policy changes related to the mineral industry in the years 1985-89. Attention focused on promoting the development of Northern Ontario, formulating environmental legislation, improving heath and safety in the workplace, and carrying out of the mandate of the five-year Canada/Ontario Mineral Development Agreement, signed in 1985.

A general reorganization of the Ontario administration took place in 1985, after the Liberal Party (with the support of the NDP) came to power. Mining and mineral-related responsibilities have been fragmented and separated, both among different departments and between Toronto and Sudbury. The Mineral Resources Branch and the Mining Lands Branch of the Ministry of Natural Resources (MNR) were transferred to the Ministry of Northern Affairs. The Ministry was renamed Northern Affairs and Mines; subsequently, it became the Ministry of Northern Development and Mines (MNDM). Responsibility for administration of the Mining Tax Act was transferred to the Ministry of Revenue, and the office of the Mine Assessor was eliminated. Mining tax administration was integrated with other Ministry of Revenue functions. The Incentives Section remained with the Mines and Minerals Division of a reorganized Ministry of Northern Development and Mines (see below).

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[1] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1985-89*. See also, Canada/Ontario Mineral Development Agreement, "Ontario's Mineral Wealth," 1989, pp. 2-3.

[2] Ontario, Ministry of Northern Development and Mines, *Ontario Mining Today*, 1988, p. 1.

[3] "Dofasco purchases Quebec operation," *Northern Ontario Business*, April 1989, p. 16. See also, "Dofasco Inc. to Discontinue Mining Operations," *CIM Reporter*, 1 May 1989.

Certain responsibilities relating to mineral and petroleum resources activities remained with the Ministry of Natural Resources. These included the Pits and Quarries Control Act, the Petroleum Resources Act, the Industrial and Mining Lands Compensation Act, the Gas and Oil Leases Act, and the Beach Protection Act. The Fuel Minerals and the Industrial Minerals Sections remained with MNR as part of the Land Management Branch.

In 1986, it was announced that the head office of MNDM was to be moved from Toronto to Sudbury, along with certain other government offices related to the mining industry. Two divisions were created in the Ministry: Mines and Minerals, and Northern Development. The Mines and Minerals Division, with Mineral Development Branches in Timmins and Kenora, incorporated the Ontario Geological Survey, the Mineral Resources Branch, the Mining Tax Assessor and the Ontario Mineral Exploration Program Office. The Aggregate Resources Section and the Fuel Minerals Section remained with MNR, joining the Lands and Waters Group.[4]

These initiatives, and others such as the Northern Ontario Regional Economic Development Program, were aimed at diversifying northern Ontario's economic base. Two major studies of northern economic prospects, the Fahlgren Report (1985) and the Rosehart Report (1986), helped shape priorities.

The Mining branch of MNDM was reorganized in 1989 into four new sections: a new mining lands section (to co-ordinate the provincial lands program), the mineral development section (to develop marketing opportunities, providing both advisory and financial aid), the policy and planning section, and the information and statistics section.[5]

Several pieces of legislation related to mining were tabled during the latter half of the 1980s:

- An *Act to Revise the Mining Act* (Bill 29) received first reading in June 1985. The Bill proposed simplified regulatory activities and expanded the authority of the Mining Recorder in administrative matters formerly handled by the Mining and Lands Commissioner. The Bill was not permitted to reach second reading. The subsequent government later introduced new legislation.
- The Ministry of Natural Resources introduced the *Aggregates Resources Act* in 1988, consolidating and amending the Pits and Quarries Control Act, the Beach Protection Act and parts of the Mining Act.

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[4] Ontario Mining Association, "Mining Matters!: A digest of opinion and comment about the mineral industry," February 1986.

[5] "Big changes in Ontario mining ministry," *Public Sector*, 23 January 1989, p. 2.

- Ontario's 83 year-old *Mining Act* was amended. New legislation incorporating recommendations proposed by the 1988 *Green Paper* received Royal Assent on 6 December 1989.

In June 1987, the Ontario Securities Commission released its policy on junior mine financing.

Mineral-Related Task Forces and Studies

The Royal Commission on the Northern Environment: The Fahlgren Report. A 450-page report by the Royal Commission on the Northern Environment, the Fahlgren Report, was published in June 1985. The report recommended that the Government of Ontario recognize the importance of the mineral industry to the province's economy and future welfare. Recommendations were made to advance exploration and development and review the existing tax structure as it applied to mining. The Fahlgren Report was eclipsed by a newer study after the Liberal government came to power. The new study, the *Rosehart Report*, also looked at northern priorities.

Advisory Committee on Resource Dependent Communities in Northern Ontario: The Rosehart Report. The advisory committee, established in December 1985 to examine the situation and future of northern resource communities in Ontario, presented its report 26 May 1986. The committee outlined the problems of northern communities including, among other things, resource depletion, growing unemployment, declining population, the difficulty of attracting professionals, high costs, social problems, and the vulnerability of resource products to fluctuating world prices, global competition, and corporate policy changes.

The committee identified northern development opportunities and recommended that the provincial government adopt a long-term development strategy for Northern Ontario. Measures to facilitate community and employment adjustment in the face of resource sector disruptions, and to enhance the viability and competitiveness of primary industries in the north were proposed.[6] The committee also suggested that the decision-making process be decentralized to the north.

Industrial Minerals Industry. A ministerial review committee (under MNDM) was formed to examine ways of stimulating the industrial minerals industry. Ministry officials concluded that some segments of the northern industrial minerals industry were promising. It would be necessary to target large nearby markets because industrial minerals do not generally command as high a unit price as rarer metals, and because transportation costs are an important consideration.

The Advisory Committee on Junior Resource Financing and the Competitive Position of Ontario. On 31 July 1986, the provincial government released the *Final Report and Recommendations* of this Committee.[7] Headed by Edward G. Thompson, past president of the Prospectors and Developers Association of Canada, it was established to assess the provincial tax system, the Ontario Geological Survey (OGS), the Ontario Mineral Exploration Program (OMEP), the proposed Ontario Share Ownership Plan and the Ontario geoscience database in terms of their impact on mineral exploration.[8] The final report of the Thompson Committee recommended clear rules for raising capital and new incentives to encourage prospecting and mineral development investment in Ontario.[9] Recommendations included more support for the OGS and OMEP programs, establishment of a $25-million Ontario Mine Development Fund, and various tax changes.[10]

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[6] Ontario, Ministry of Northern Development and Mines, Committee on Resource Dependent Communities in Northern Ontario, *Final Report and Recommendations*, R.G. Rosehart, Chairman, 26 May 1986.

[7] *PDA Digest*, Summer 1986.

Canadian Over-the-Counter Automated Trading System (COATS). This information network was introduced in 1986 by the Ontario Securities Commission in cooperation with the Toronto Stock Exchange, to provide stock dealers and investors with more accurate trading data and a regulated market for unlisted securities. COATS would give small mining companies seeking venture capital a market in Ontario for their securities. These companies have primarily been attracted to the Vancouver Stock Exchange.[11] The Thompson Committee (discussed above) supported COATS, and recommended upgrading the system to encourage member firms of the Toronto Stock Exchange to become involved in junior mining.[12]

Ontario Securities Commission (OSC). OSC policy on junior mine financing, based on the report of the Thompson Committee, was released in June 1987 for public comment. Among the proposals was the requirement that an issuer would have to raise at least $100,000 net of equity financing, and spend $60,000 on the exploration or development of a resource property. Following further consultations, a new policy with somewhat less restrictive guidelines was introduced by the OSC in January 1988, and has continued to undergo amendment. In addition, a task force was announced by the OSC to consider the Thompson Committee's recommendation to upgrade COATS.[13]

Ground Control and Emergency Preparedness in Ontario Mines (GREP). An inquiry set up in 1984 to deal with these issues released its report on 25 March 1986. The GREP inquiry was formed after four miners were killed in a rockburst at a Falconbridge mine. Among the report's 60 recommendations were the establishment of a research institute on ground control, and improved training and communications systems for both emergency and routine situations.[14] The research centre has been established jointly with the University of Toronto, Laurentian University and Queen's University.

Committee on Ontario's Future Mining Educational Needs. In 1986, a review of the Ontario mining industry's future education and training needs was led by Bruce Ross, then president of the Canadian Institute of Mining and Metallurgy. The committee also considered recommendations presented by the GREP Inquiry.[15] The final report was released in April 1987, with many recommendations to enhance educational programs, including closer cooperation among community colleges and universities, continuation and enhancement of mining and related engineering programs, and the maintenance of close contacts between the educational institutions and the mining industry to ensure that programs meet the needs of the industry. The report also recommended the

[8] "Mining in the North," *The Globe and Mail*, 17 February 1986. See also, *PDA Digest*, Autumn 1986, p. 6.

[9] "Ontario to aid sales of junior mine stocks," *The Globe and Mail*, 2 August 1986, p. B5.

[10] *PDA Digest*, Autumn 1986, p. 6.

[11] "COATS may be boon for unlisted," *The Globe and Mail*, 18 April 1986, p. B2; "COATS has taken off with a bang," *The Northern Miner*, 28 July 1986, p. 4.

[12] "Prospectors could sell their shares sooner under proposal," *The Northern Miner*, 20 October 1986, p. 6.

[13] "Junior mining policy released for comment," *The Northern Miner*, 6 July 1987, p. 14.

[14] "Mine safety report assailed by labour chiefs," *The Toronto Star*, 26 March 1986.

[15] Ontario, Ministry of Northern Development and Mines, "News Release," 20 October 1986.

establishment of the Ontario Institute of Mining Technology, bringing together the mining-related programs at Cambrian College and Haileybury. Programs and courses which offer skill upgrading for industry personnel were also suggested, as well as courses in occupational health and safety, maintenance and management skills.[16] The importance of improving the work experience component of mining programs was stressed.

Crown Corporations, Direct Investment/Equity Participation

Suncor Inc. In 1985, as part of an overall effort to rationalize provincial Crown corporation interests, the new Liberal government indicated that it would pay off the remaining interest charges ($305 million) on the debt incurred to buy a 25 percent share in Suncor Inc. The move would allow the government to discharge its debt six years early and save $115 million in future interest charges. When the Suncor shares were purchased by the former Conservative government in 1981 from the Pennsylvania-based company, 50 percent of the $650-million purchase price took the form of a long-term loan from the vendor.

Assistance Initiatives

Direct Assistance/Grants and Subsidies

Ontario Mineral Exploration Program (OMEP). In 1986, an additional $4 million was allocated to the $8-million budget of the OMEP program, which began in 1980. Originally paying 25 percent of costs of eligible exploration projects in Ontario, OMEP was amended to allow a wider variety of programs than had been possible under the original Act.

Ontario Prospectors Assistance Program (OPAP) and the *Ontario Mineral Incentive Program*. An $8-million mineral incentive program was approved by the Legislature on July 13, 1989. The program, designed to encourage base metal exploration, had two parts: the *Ontario Prospectors Assistance Program (OPAP)* and the *Ontario Mineral Incentive Program* (formerly OMEP – see above). Individual prospectors would be eligible for grubstakes of up to $10,000 under OPAP, while junior companies were eligible for grants up to $150,000 or for 30 percent of their exploration expenses. The junior companies could receive grants only if they did not raise money through flow-through share financing.[17]

Canada/Ontario Mineral Development Agreement (COMDA)

In 1985, the federal and Ontario governments signed a five-year, $30-million mineral development agreement designed to stimulate exploration, improve productivity through mining and minerals technology, and enhance economic development activities. The five program areas included were geoscience, information exchange, productivity and technology, economic development, and public information, evaluation and administration.

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[16] Ontario, Ministry of Northern Development and Mines, Mining Education and Training Needs Review Committee, Bruce Ross, Chairman, *Final Report and Recommendations of the Committee on Ontario's Future Mining Educational Needs*, April 1987.

[17] "New mineral incentive program approved by Ontario legislature," *The Northern Miner*, 23 July 1989, p. 5.

Geoscience. The $18.4-million program concentrated on exploration targets near existing population centres. The goal was to help foster a diversified resource base for communities heavily dependent on mineral development. Studies were carried out in several areas, including Kenora-Fort Frances, Ignace, Beardmore-Geraldton, Timmins-Chapleau, Sudbury-Cobalt, Parry Sound-Muskoka and eastern Ontario.

Information Exchange. A $1.9-million program to improve private-sector access to government mineral data was supported by COMDA. A pilot project was developed under the Geoscience Spatial Information System (GEOSIS). GEOSIS was designed to retrieve, process and distribute geoscience information from the Uchi Belt in northwestern Ontario and other test sites. Assessment reports submitted for work under Ontario's Mining Act were indexed and keyed into the Geological Survey of Canada's GEOSCAN database.[18]

Productivity and Technology Program. The $3.6-million productivity and technology program was a federal program carried out by CANMET in cooperation with industry to improve productivity while maintaining safety in deep mines. Studies included developing a proposal for a standardized computer operating system for the Ontario mining industry, methods to improve the characteristics of backfill from mill tailings, the development of computer software to improve design of stoping methods, and methods to help predict stresses around mine openings.[19]

Economic Development. A $2.5-million industrial mineral strategy program was carried out by the province to consider the problems and opportunities facing the industrial minerals industry, including studies which addressed commodity specifications, potential markets, uses, and transportation. A $2-million program improved road access by joining highways 66 and 101 in northeastern Ontario.[20]

Public information, evaluation and administration program. This portion of the agreement ensured proper administration and the provision of public information of activities carried out under COMDA.

Geoscience Data Assistance

Computerized Mining Land Information System. In 1989, the provincial government allocated $2 million to this system, which gives access to claim records in all nine provincial mining recorder offices.[21]

Research and Development

Ontario mining research and development centres. The government provided $400,000 to the Northern College's Haileybury mining program. In response to the recommendations of the GREP inquiry (see above), Chairs in mechanics and ground control were established at Laurentian University, the University of

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[18] Canada-Ontario Mineral Development Agreement, *Annual Report 1987-1989*, January 1990, p. 20.

[19] *Ibid*., p. 4.

[20] *Ibid*.

[21] *Ibid*.

Toronto and Queen's University at Kingston.[22] The three universities collaborate in this area of research.

Rockburst Research Program. CANMET, the Ontario Ministries of Natural Resources and Labour, and an industry group including Campbell Red Lake Mines, Falconbridge, and Inco, each contributed $1.4 million toward a five-year rockburst study. The tripartite research program was initiated in 1984, at the same time as the GREP inquiry, to investigate the development of seismic monitoring techniques and equipment and analyze rockbursts. Researchers were to study ways of improving safety by identifying potential rockburst areas, the effects of mine design, and the impact of mining activities on the causes of rockbursts. Six seismograph stations were located in northern Ontario, and microseismic networks were installed near mines. The program is a response to increased seismic activity related to bulk mining operations in northern Ontario.[23]

A further response to the 1986 release of the GREP report was an agreement between the governments of Ontario, Canada and the United States to establish a research program of rock mechanics and ground control. The U.S. Bureau of Mines, CANMET and the Ontario Ministry of Labour cooperated in the program.[24]

Mine Environment Neutral Drainage (MEND). CANMET, the Canadian mining industry, Environment Canada, British Columbia, Manitoba, Ontario, Québec and New Brunswick launched the MEND program in 1988 to find solutions for the prevention and control of acid mine drainage.[25]

Earth Sciences Centre. In 1986, the Ontario government committed $30 million to a new Earth Sciences Centre at the University of Toronto. The Centre has departments of geology, forestry and botany.

Laurentian University. In the fall of 1987, it was announced that Laurentian University at Sudbury would be equipped with collaborative facilities that would become a "Centre of Excellence in Mining." A $53-million Mines and Minerals Research Centre was constructed to house the Ontario Geological Survey of the Ministry of Northern Development and Mines and the Ontario Mining Association's research directorate, as well as a new Ontario Miners' Health and Safety Centre of the Ministry of Labour.[26] The Ontario Minister of Labour announced a $2-million grant to facilitate research into mining safety, which included a $1.5-million contract to buy machinery for a new wire-rope-testing laboratory at the new Health and Safety Centre. The laboratory was previously situated in Toronto. A $462,000 grant to help researchers develop effective respirators for miners was one of a number of mining-related research grants given to the university.[27]

Human Resources Assistance

Native Employment. In 1988, Placer Dome, the federal and provincial governments, the Osnaburgh Band and the Windigo Tribal Council reached an agreement which set targets for native employment at Placer Dome's Dona Lake Mine. The Ministry granted the Tribal Council $93,000 to facilitate native employment at the mine and to arrange training opportunities. This approach has been used with other bands located in mining areas in Ontario.[28]

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[22] "Mines ministry, 290 jobs to move to Sudbury area," *The Toronto Star*, 31 July 1986. See also, "Ministry move to Sudbury more than three years away," *The Northern Miner*, 29 September 1986.

[23] Energy, Mines and Resources Canada, "News Release," 8 March 1989.

[24] "Mines probe urges safety researching," *The Sudbury Star*, 25 March 1986.

[25] Energy, Mines and Resources Canada, *CANMET: Annual Report, 1988-89*, p. 15.

[26] *Northern Ontario Business*, August 1989, p. 29.

[27] "Sudbury to get $2 million to help make mining safer industry," *Northern Life*, 9 September 1987; "Helping mining face the challenges," *The Sudbury Shopper*, 28 October 1987.

Northern Ontario Regional Economic Development Program. In 1986, the provincial government announced the Northern Ontario Regional Economic Development Program. MNDM approved $1,970,894 in grants for 59 projects-.[29] This program was replaced in 1988 with the Northern Ontario Heritage Fund Corporation, through which the provincial government committed $360 million (over 12 years) to "encourage the diversification and development of the Northern Ontario economy."

Programs under the Fund include The Single-Industry Commodities Program, The New Technology Program, and Norfund, which assists in the start-up and/or expansion of commercial activities, including quarrying and mining.

Ministry of Northern Development and Mines. The new Liberal government announced in 1986 that the head office of MNDM would be moved from Toronto to Sudbury, effectively transferring 290 jobs to the area. Other government offices related to the mining industry were also to be moved north, including the mining health and safety branch of the labour ministry, and the Ontario Geological Survey department. The decision reflected Ontario's new policy to develop the northern economy and was intended to "bring mining functions in the government closer to the mines and miners they serve."[30]

The Ontario government's decision to assist the mineral industry as part of its effort to strengthen the northern economy led to several other region-specific projects in 1986.[31] In the Wawa area, for example, they included

- the opening of a geologist's office and mining reference centre;
- a three-year, $855,000 geological survey of the Wawa-Mishibishu Lake area;
- a $767,000 electro-magnetic geophysical survey of the Wawa Greenstone belt;
- mineral access road feasibility studies in the Wawa-Gourdeau area;
- the appointment of an economic development coordinator.[32]

Community Economic Transformation Agreements. In 1986, this program was renewed and its scope broadened to emphasize long-term job creation. The program, which received $25 million over the following two years, was expected to help single-industry communities such as the City of Sault Ste. Marie, which was facing major layoffs at Algoma Steel.

Mineral Economic Development Agreement (MEDA). When the Adams and Sherman iron ore mines closed in 1989, 700 workers lost their jobs, which had a serious impact on the community. The Community of Temagami concentrated on revitalizing the area, attempting to attract secondary industry, and put into place a development plan funded by a $1-million MEDA grant from the provincial government.[33]

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[28] Ontario, Ministry of Northern Development and Mines, *Ontario Mining Today*, 1988, p. 29.

[29] Ontario, Ministry of Northern Development and Mines, "Prospects," Vol. 1, No. 3, October 1986.

[30] "Mines ministry, 290 jobs to move to Sudbury area," *The Toronto Star*, 31 July 1986. See also, "Ministry move to Sudbury more than three years away," *Northern Miner*, 29 September 1986.

[31] Some of them funded by the Canada-Ontario Mineral Development Agreement.

[32] Ontario, Ministry of Northern Development and Mines, "Prospects," Vol. 1, No. 3, October 1986.

[33] "Dofasco purchases Quebec operation," *Northern Ontario Business*, April 1989, p. 16. See also, "Dofasco Inc. to Discontinue Mining Operations," *CIM Reporter*, 1 May 1989; "Algoma seeks cheaper processing to delay Wawa mine closing," *The Globe and Mail*, 11 August 1989, p. B3.

Regulation of the Mineral Industry

Land Access and Tenure

Wilderness Parks. On 17 May 1988, the provincial government announced that mining exploration would not be allowed in three newly created park areas in the Dryden Ontario District.[34]

An Act to Amend the Public Lands Act (Bill 137). A multi-use work permit governing all activities on Crown land was introduced in 1989. Prospectors and developers complained that the permit was applied inconsistently across the province.[35]

Native Lands. The Ministry of Natural Resources established a Native Lands Section in January 1989, to deal with land and resource issues involving Crown land and Indian land claims. The section is also responsible for programs geared toward natural resource use for the economic benefit of Native people.[36]

Mining Regulation

Ontario Mining Act (Bill 29). The Ministry of Natural Resources introduced a new Ontario Mining Act in 1985, to help simplify and streamline legislation affecting mineral exploration and development in the province. New provisions related to the size and requirements for maintaining a claim in good standing and the negotiation of Exploratory Licences of Occupation. Under the new act, there was to be no limit on the size of the area to be explored, and assessment work was to be measured in dollars spent, rather than person-days of effort expended. Bill 29 did not reach second reading and eventually died on the order paper.

The Green Paper on Mines and Minerals. In 1988, another attempt was made to revise the Mining Act. The provincial Green Paper on Mines and Minerals released in December recommended 49 changes. The stated aim was to enhance Ontario's ability to attract mining capital for mineral development while accommodating the concerns of other sectors of the community.[37] The Green Paper elicited various responses from a wide range of groups, including individuals, communities, junior companies and large industries. While pleased to see the Act updated, industry representatives had some concerns. The Prospectors and Developers Association of Canada had several reservations, particularly about the issuing of mining permits.[38]

An Act to Amend the Mining Act (Bill 71). Amendments to Ontario's 83-year-old Mining Act were tabled in the Legislature in October 1989, receiving Royal Assent on 6 December 1989. Sections dealing with disputes and safeguarding mining claims came into force when the Bill received Royal Assent. The rest of the amendments did not come into force until 3 June 1991. The new legislation incorporated many of the recommendations made in the 1988 *Green Paper on Mines and Minerals*.

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[34] "Exploration ban in parks results in millions of lost dollars," *The Northern Miner*, 30 January 1989, p. A5.

[35] Saley Lawton and Ian Atkinson, "New Environmental Legislation Causing Concern," *Exploration and Development Highlights*, Prospectors and Developers Association of Canada, March 1991, p. 42.

[36] Ontario, Ministry of Natural Resources, *Annual Report 1988-89*, p. 30.

[37] "Associations file objections to proposed mining legislation," *News/North*, April 1989.

[38] *Ibid.*

Among the changes introduced were measures to ensure environmentally sound mining activity, maintain provisions for domestic processing of provincial mineral resources, and provide rules for staking practices.[39]

Other amendments included provisions for mine reclamation (Part IX), requiring companies to submit a closing plan and post financial assurance that they could follow through with reclamation. There requirements could cause financial difficulty for smaller companies attempting to bring mines into operation.[40]

Aggregates Resources Act. In 1988, the Ministry of Natural Resources introduced the Aggregates Resources Act, consolidating and amending the Pits and Quarries Control Act, the Beach Protection Act and parts of the Mining Act. The Act promotes the rehabilitation of pits and quarries, emphasizes environmental considerations, and provides for more municipal control over aggregate operations.[41]

Environmental Regulation

Countdown Acid Rain Program. In December 1985, the government announced a program to reduce province-wide emissions of sulphur dioxide to 60 percent of the 1980 level of 2,194 kilotonnes to 885 kilotonnes by 1994. The main industrial sources of SO_2 were Inco, Falconbridge, Algoma Steel and Ontario Hydro. The control program established a timetable, setting individual targets for stringent emission limits, requiring each company to meet the timetable and file progress reports in 1988.

Municipal/Industrial Strategy for Abatement (MISA). A White Paper was tabled 24 June 1986, recommending the imposition of water pollution regulations which would force companies to monitor their own operations and reduce toxic discharges. A new enforcement branch was established in the Ministry of the Environment. Thirty-nine percent of the companies affected by the MISA program are located in Northern Ontario.[42]

MISA is a two-stage program. The first, "monitoring," stage required industries which discharge effluents into Ontario waterways to conduct one-year studies to measure and assess certain parameters of their effluents. The second, "abatement," phase imposed limits based on the *best available pollution control technology*. The program involves all the municipalities and eight industrial sectors: petroleum and organic-chemical industries, electrical-power generation, industrial minerals, inorganic minerals, iron and steel, metal mining and refining, and pulp and paper.[43]

For the metal and salt mines (Group A), draft regulations were in place January 1989. For a period of one year, beginning in 1990, effluents of 67 metal and salt mines would be monitored at an estimated cost to industry of $15 million. In the case of industrial minerals (Group B), a final draft of "Effluent Monitoring Regulations" was released for public comment in October

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[39] "Ontario government tables proposed Mining Act update," *The Northern Miner*, 30 October 1989.

[40] "Ontario to force mines to clean up their waste," *The Toronto Star*, 25 October 1989.

[41] Ontario, Ministry of Natural Resources, *Annual Report 1988-89*, p. 30.

[42] "Polluters under the gun," *Northern Ontario Business*, October 1987.

[43] *The Globe and Mail*, 25 June 1986.

1989. One-year monitoring of Group B was to begin May 1990 (but was delayed until August 1) at an estimated cost of $2 million. The regulations were drafted by a joint technical committee comprising representatives of industry, the Ministry of the Environment, and Environment Canada, and a representative from the MISA advisory committee.[44]

The monitoring information will be used to draft environmental policies, as well as to police the industry. The MISA legislation was finally promulgated on 26 August 1989 under the *Environmental Protection Act*. Violators face fines up to $25,000 per day for a first offence and $50,000 per day for subsequent convictions.[45]

Exemptions to the legislation included exploration and development projects, mines with less than 50,000 litres of effluent entering the environment daily, and mines which are about to close. The Ontario Mining Association worked with the Ontario government to bring some understanding of the mining industry to those drafting the legislation.[46]

Dangerous Goods Transportation Act. The Ontario Dangerous Goods Transportation Act was assented to in December 1982 and proclaimed 1 July 1985. The Act was designed to coordinate with federal legislation which provided a uniform system for identifying and controlling the transportation of hazardous wastes across Canada.

Health and Safety Regulation

Industrial Disease Investigation. In 1986, the Labour Ministry released its three-year study entitled *The Mortality of Ontario Miners*. This study prompted a larger investigation that looked at 50,201 full-time miners who had worked underground from 1955 to 1977. The Workers' Compensation Board was waiting for the results of the research team's study before deciding on the claims of the affected gold miners and their families.[47] In 1987, on the basis of the investigation, the Industrial Disease Standards Panel of the Ministry of Labour reported that a connection probably could be made between lung cancer and certain work in the gold mining industry. (See *Workers' Compensation Board* below.) The panel did not find a link between stomach cancer and gold mining.

The panel made recommendations to the Workers' Compensation Board, including the setting of criteria for compensation of workers with lung cancer.[48]

Hazardous Substances. In 1986, Ontario introduced a regulation entitled *Respecting Control Of Exposure to Biological or Chemical Agents Made Under the Occupational Health and Safety Act,* which set numerical standards governing the exposure of workers to hazardous substances. The specification of legal limits on substances was expected to facilitate the prosecution of employers not adhering to the safety limits.[49] Many common mineral substances were included in the list of substances identified as harmful.

Fatalities Committee. In June 1987, the *Mining Industry's Fatalities Committee* was formed to develop an understanding of how mining fatalities occur and to develop effective controls.[50] Lengthy hearings into health and safety in Ontario mining were carried out at the beginning of 1988, following the worst year (1987) for mining fatalities since 1980. At the same time, an all-party provincial Legislative Committee began sifting through recommendations made by industry, labour, and government representatives. This committee's investigations did not include disease-related illnesses and deaths.[51]

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[44] Ontario Mining Association, *Mining In Ontario 1990*, pp. 35-37.

[45] Ontario Mining Association, "Mining Matters," October 1989.

[46] *The Northern Miner*, 3 April 1989, p. 4.

[47] "Death and disease among gold miners spark investigation," *The Globe and Mail*, 7 February 1986, p. A5.

[48] "Lung cancer, gold mining linked," *The Globe and Mail*, 12 May 1987.

[49] "New regulation for workplace toxins gives province clout," *The Toronto Star*, 7 November 1986. See also, Ontario Ministry of Labour, "Notice," 6 November 1986, regarding O.Reg. 654/86.

[50] "19 fatalities in 1987 prompt committee probe," *The Northern Miner*, 8 February 1988, p. 1.

The Mining Industry's Fatalities Committee met with the Legislative Committee during a series of hearings on health and safety in Ontario mining in 1988. This exercise had four major objectives: the implementation of fail-safe procedures (to minimize the impact of an accident), the compilation and analysis of statistics on mining fatalities over the previous 12 years, the development of the Internal Responsibility System, and an investigation of mine employee attitudes toward safety.[52]

Occupational Health and Safety. Amendments were introduced to the provincial *Occupational Health and Safety Act* in 1989 allowing health and safety committee members to stop work when they believe a job feature poses a serious risk to the worker. Employers were made responsible for establishing health and safety policies and training programs which would meet new standards established by the amendments. Failure to comply with the terms of the act could result in a maximum penalty of $500,000 (up from $25,000).

The Act also created a new *Workplace Health and Safety Agency*, encompassing the safety and accident prevention associations, the Occupational Health and Safety Education Authority, and the Workers' Occupational Health and Safety Centre of the Ontario Federation of Labour.[53]

Ontario's Workers' Compensation Board (WCB). The Workers' Compensation Act was first promulgated in Ontario in 1914. The ratio of assets to long-term liabilities of the Ontario WCB has long been the lowest in Canada: it was 81.4 per cent in 1980 and fell to 31.7 by 1985. In other words, long-term liabilities incurred under the compensation plan were largely unfunded. In response to concerns over this and other aspects of workers' compensation, a Commission was established in 1980. Its deliberations culminated with publication of the 1981 Weiler Report, "*Reshaping Workers' Compensation for Ontario*."

Remedial measures were introduced throughout the 1980s. In 1984, for example, the New Experimental Experience Rating (NEER) Plan was approved. It based employer assessments on the expected eventual cost of a year's accidents and injuries. The NEER Plan was to be phased in over a five-year period and was made available to all rate groups whose industry associations reviewed and approved it.

Significant changes in the WC legislation and policy which occurred in the period 1985-89 include the following.

- 1985: A policy position was taken by the WCB to increase employer assessment rates by a maximum of 15 percent per year over each of the following three years. This represented the first stage in the Board's plan to retire the unfunded liability by the year 2014.[54]

  The passage of Bill 101 introduced changes to amend the Workers' Compensation Act; for example,

  - day-of-injury payments became payable by the employer to injured employees;[55]

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[51] "Safety study won't include illnesses: MPP," *The Sudbury Star*, 12 March 1988.

[52] "19 fatalities in 1987 prompt committee probe," *The Northern Miner*, 8 February 1988, p. 1.

[53] "Ontario takes giant step towards worker right to refuse," *Public Sector*, 30 January 1989, p. 3.

[54] It is intended that the Board will be fully funded by the year 2014. Unfortunately, this goal seems further away as time goes by, rather than nearer.

[55] Previously, employees had been compensated for injuries from the day after the occurrence of an accident. This change meant that an additional day's benefit must now be provided from the Accident Fund to all injured employees.

  - benefits for dependent survivors were increased;
  - the base for employee benefits was raised from 75 percent of net earnings to 90 percent of gross earnings.

  A further change in the calculation of benefits resulted from the passage of Bill 81 in December, which introduced the indexation of benefits each January first, without the need for annual reviews.

- 1986: The maximum increase in assessment rates was reduced to 14 percent.
- 1987: With the passing of the 1987 Workers' Compensation Act, a number of policy changes which had a direct effect on the mineral industry became effective. For example, the relationship between gold mining and lung cancer was recognized, and industrial disease payments were made to affected workers. In addition, chronic pain disorder was recognized as a compensable condition and the definition of "disease by accident" was ruled not to require association with a discrete external chance occurrence. Instead, it would be a sufficient condition for a disease to be caused if the disease occurred suddenly and unexpectedly in the course of a worker's job.

  Under the new Act, an additional levy was imposed on employers who were not taking sufficient health and safety precautions. A two-year pilot project was to commence in 1988 to ensure that employers were aware of the new rules.
- 1988: The WCB set a ceiling of 10 percent on assessment rate increases. It was also announced that the WCB would pay $35 million compensation to over 400 workers who had developed lung cancer and who had been employed in Ontario gold mines before 1945. The WCB was also investigating a study of mortality among gold miners from 1977 to 1985, considering whether or not additional categories of miners should be compensated.[56]
- 1989: *An Act to Amend the Workers' Compensation Act* (Bill 162). The amended Workers' Compensation Act received Royal Assent on 26 July 1989 and became effective January 1990. The main thrust of the legislation was to apply a dual-award approach for compensation which would compensate workers both for the economic loss they experience from a workplace injury and for the loss of enjoyment of life resulting from a permanent injury. Prior to the new legislation, compensation for permanently disabled workers was determined by a clinical rating schedule. By contrast, the amended legislation ties compensation to economic losses. The amendments strengthen provisions for access to vocational rehabilitation for injured workers, require firms to comply with re-employment obligations, require employers to continue contributing to workers' benefits up to one year after the injury; and entitle workers to a WCB retirement-income-loss benefit after 65 years of age.[57]

[56] "Gold miners with cancer are pledged reparation," *The Globe and Mail*, 15 January 1988, p. 1.

[57] Ontario, Workers' Compensation Board, *Legislative changes to the Workers' Compensation Act 1989*, General Information, February 1991.

Trade Initiatives

Intra-/Interprovincial Marketing

Ontario Hydro. Faced with a surplus of uranium, Ontario Hydro renegotiated its supply contract with Rio Algom in 1986. It was agreed that Rio Algom would deliver 39 percent less uranium between 1987 and 1993 than originally contracted. Rio Algom assented to the lower deliveries in return for some degree of long-term stability, to be achieved by prolonging the delivery period, rather than reducing the total quantity to be delivered. Ontario Hydro agreed to take the 72 million pounds of uranium as stated in the initial pact but with deliveries stretched out over a 42-year term. Layoffs were expected to follow as a result of the reduced delivery volumes. Ontario Hydro also provided Rio Algom with loans to reopen three of its old mines to meet the remaining delivery commitments, since the contract did not justify major new investment.

The revisions were considered necessary because of reduced demand for nuclear energy emanating from safety concerns about uranium use, conservation, and competition from alternative fuels. Ontario Hydro was reluctant to cut back on its contracted supplies from Saskatchewan because production costs at the open-pit mines in the west are much lower than those of Rio Algom or Denison Mines in Ontario.[58]

In 1989, Ontario Hydro released its 25-year plan, *Providing the Balance of Power*. The plan recommended conservation; non-utility (private-sector) generation; new hydraulic, gas-fired, and nuclear supply; purchases from out of province; and rehabilitation of existing generating stations.[59]

International Trade

Ontario's Liberal government officially opposed negotiations for free trade between Canada and the United States. On the other hand, Ontario's mining companies supported the proposed phase-out of U.S. tariffs on Canadian metals, alloys and mineral products.[60]

Taxation Matters Affecting the Industry

General Taxation

Corporate Income Tax. The 24 October 1985 budget announced a general corporate income tax rate increase to 15.5 percent from 15 percent, effective 18 December 1985. The corporate income tax rate on mining rose to 14.5 percent from 14 percent.

The 20 April 1988 budget phased out the three-year tax holiday (introduced in 1984) which had been available to qualifying new corporations. The budget also introduced a tax deduction for purchases of new manufacturing and processing machinery and equipment used in Ontario. A research and development Super-Allowance was made available for expenditures (made after April 20) eligible for the federal research and development investment tax credit.

[58] "Rio Algom renegotiates Hydro contract," *The Globe and Mail*, 30 April 1986. See also, 1 May 1986, p. B3.

[59] Ontario, *Ontario Hydro Annual Report 1990*, April 1991.

[60] Ontario, Ministry of Northern Development and Mines, February 1991.

In the 17 May 1989 budget, some purchases of new air and water pollution-control equipment for use in Ontario became eligible for a one-time direct deduction from income. For purchases made in 1989, the current-cost adjustment rate was 10 percent, while after 1989 the rates were set at 15 percent.

Capital Tax. The 20 April 1988 budget amended the capital tax for small corporations, exempting corporations with less than $1 million in assets and gross revenues. A general rate of 0.3 percent was phased in for corporations with taxable capital exceeding $2 million.

Employee Share Ownership Plans. In the 13 May 1986 budget, a study to investigate the establishment of employee share ownership plans was announced. Eligible employees would be entitled to tax credits against Ontario income tax for share purchases. Bill 20 to establish such plans became effective 1 January 1988, and was to be reviewed by an Ontario legislative committee at the end of five years.

Payroll Tax. In the 17 May 1989 budget it was announced that, effective 1 January 1990, the Ontario Health Insurance Plan premiums were to be replaced by a payroll tax, the Employer Health Levy. *The Employer Health Tax Act* (which received Royal Assent 19 December 1989) implemented the tax. Employers are required to pay mandatory monthly instalments calculated on an applicable rate, multiplied by gross salaries, wages and other remuneration for the month.

Mining Taxation

Ontario Mining Tax Act. In the October 1985 budget, it was proposed that the limit on mining profits exempt from taxation be increased from $250,000 to $500,000 and that the marginal tax rates, which ranged from 15 percent to 30 percent, be replaced with a flat 20 percent tax rate. With the implementation of a flat rate tax, it was suggested that the disaggregation rules for new mines be repealed.

Mining companies with more than one mine were not happy with the proposal to offer an aggregate tax examption of $500,000, rather than a $250,000 exemption on each mine owned. Tax revenues were to be maintained by scaling back the processing allowance deductions:

Allowance as Percentage of Investment

	1985 Existing	Proposed
Concentrator	8	8
Smelter	16	12
Refining in Canada		
Canada	20	16
Northern Ontario	25	20
Further processing in Northern Ontario	30	20

The budget also contained suggestions that the maximum processing allowance deduction be reduced from 65 percent to 50 percent of income before such allowance, and that there be no carry-forward of processing allowance. The Minister of Northern Affairs and Mines invited industry for comments on the proposed changes.

In the 1986 spring budget, responsibility for the *Ontario Mining Tax Act* was transferred to the Ontario Ministry of Revenue. The budget now proposed that the existing maximum processing allowance deduction be maintained at 65 percent of income, overturning the earlier proposal to reduce it to 50 percent.[61] The tax recommendations of the Thompson Committee on Junior Resource Financing (see above) were not pursued.

In February 1987, Bill 189 was introduced to streamline and simplify the *Ontario Mining Tax Act,* and to replace the sliding tax on mining profit (set at 15 to 30 percent on profits of more than $250,000) with a flat 20 percent tax on an operator's mining profit over $500,000.[62]

The May 1987 budget outlined a policy exempting all new eligible mines from the 20 percent mining profits tax for their first three years of commercial production. The exemption included major mine expansions and reopening of mines.

The April 1988 budget announced that Ontario's percentage depletion allowance would be phased out over a five-year period. At the same time, the resource depletion allowance would be phased in as follows:

Year	Percentage Depletion Allowance (percent)	Resource Allowance (percent)
1988	33 1/3	–
1989	26 2/3	5
1990	20	10
1991	13 1/3	15
1992	6 2/3	20
1993	–	25

In the May 1989 budget, *An Act to Amend the Mining Act* (Bill 71) was introduced, receiving Royal Assent on 6 December 1989. The bill was implemented to encourage exploration and development in Ontario while recognizing environmental and other concerns. In addition to some general measures, the acreage tax was renamed the mining land tax; the rates of mining land tax were to be prescribed by regulation; and one-year prospectors' licences were replaced with five-year licences.

An *Act to Amend the Mining Tax Act* (Bill 104) which was given first reading 20 December 1989, added technical rules for the calculation of interest on tax instalments, established rules governing the confidentiality of taxpayer information, and imposed penalties for failure to file a return.

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[61] "Ontario budget has some mining pluses," *The Northern Miner*, 26 May 1986, p. 4. See also, Millie Goodman, *Tax Memo: 1986 Tax Developments*, Canadian Tax Foundation, No. 72, March 1987.

[62] "Ontario moves toward a flat-rate mining tax," *The Toronto Star*, 11 February 1987. See also, "Mining Tax Act a big step ahead," *The Northern Miner*, 23 February 1987, p. 4.

10. Québec

Introduction

Industry Trends

> Over half the value of Québec's mineral production is derived from gold, iron ore, asbestos and copper. Mining has traditionally been a major source of employment in the northeastern, north-central and Gaspé regions of the province. Direct employment in the Québec mineral industry during 1987-88 was approximately 20,000. In 1985, the value of Québec's mineral production was $2.2 billion. Following a slight drop in 1986, the value of production rose to almost $2.9 billion in 1989.

Low gold prices in 1985 resulted in the closing of Teck Corporation's 50-year-old Lamaque gold mine in Val d'Or and a temporary shut-down of Louvem Inc.'s Chimo mine, a subsidiary of the provincial Crown corporation Société Québécoise d'Exploration Minière (SOQUEM). However, gold continued to be the leading mineral for exploration, spurred on by important new discoveries in the northwestern area of the province. In 1985, expenditures on exploration reached a record high of $166 million, while the value of mineral production increased only slightly over 1984, rising to $2.23 billion.[1]

Although production of most mineral commodities declined somewhat in 1986, exploration expenditures and investments reached record highs due both to major discoveries in gold and base metals and to attractive flow-through share tax provisions.

Largely because of higher gold prices, the province's value of mineral production in 1987 rose to a record $2.5 billion. In February 1987, the Québec Prospectors' Association released a report on the impact of flow-through share financing on mineral exploration in Québec. The $100,000 study was financed by the provincial government, the Prospectors and Developers Association of Canada, the Canadian Diamond Drilling Association, municipalities and towns in Québec, and the Québec Prospector's Association. The report, which examined the period from 1980-85, revealed that the federal and Québec governments had deferred over $239 million in taxes by implementing the flow-through scheme. These initiatives had contributed to a number of discoveries, eight of which were estimated to be economically viable.[2] In 1988, gold mine production increased significantly when seven new gold mines went into production. Exploration expenditures, however, were dramatically lower than 1987.

By 1989 markets for ferrous metals were relatively stable; there was some volatility in copper and zinc, while markets in precious metals and industrial metals remained unsteady.

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[1] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1985*, Mineral Report No. 34.

[2] "QPA study of flow-through confirms PDAC position," *PDA Digest*, March 1987.

Crown Corporations, Direct Investment/Equity Participation

Société Québécoise d'Exploration Minière (SOQUEM). In 1985, SOQUEM, the provincially owned mining company, carried out a corporate re-evaluation. The review examined the possibility of selling part of the Seleine rock salt mine on Iles-de-la-Madeleine to a private investor or operating partner. SOQUEM had shown a deficit for five of the previous 10 years. Factors contributing to the losses included the substantial debt load and major engineering problems in the salt mine.

In 1986, the provincial government announced plans to privatize SOQUEM in a two-step process involving the transfer of SOQUEM mining assets (except for its Seleine salt mine) to a new company, Cambior Inc, and then a public issue of Cambior shares. Subsequently, Cambior Inc. was formed to take over SOQUEM's mining assets except for its Seleine salt mine. Under the plan, SOQUEM retained a 32 percent stake in Cambior with a commitment to further reduce its holdings. The rest of the Cambior shares were to be offered to the public. The main assets to be transfered to Cambior were SOQUEM's 50 percent stake in the Doyon gold mine near Cadillac and its 50 percent interest in the Niobec mine at St. Honoré which produces niobium pentoxide. Investments in two smaller mines were also included in the package: a 32 percent stake in Sullivan Mines Inc. and Aiguebelle Resources Inc. SOQUEM would continue as a government-owned exploration company.[3] On 31 March 1989, SOQUEM still held a 30 percent interest in Cambior.

The Québec government sold its Seleine mine operation in 1988 to Canadian Salt Co. Ltd. for $35 million, less than one-third of the amount the province had spent on the mine between 1979 and 1983. The deal required Canadian Salt to keep the mine operating for ten years, to continue to employ local workers (at the same proportion and under the same working conditions as before), and to keep the mine's headquarters in Québec. The company agreed to spend $16 million to modernize the mine and increase production levels to 1.4 million tonnes from the existing 1.25 million tonnes. Québec will be able to reclaim Seleine's assets at 50 percent of their market value if Canadian Salt fails to live up to the contract. The Québec Transport Department will continue to buy 90 percent of its required road salt from the Seleine mine for an additional 10 years.

Société Nationale de l'Amiante (SNA). The Québec government's asbestos holding company, SNA lost $109 million in 1985-86, bringing its accumulated deficit to $248 million. The losses were attributed largely to write-offs ($89 million) and to declining asbestos demand.[4]

As a result of the privatization program started in 1986, the SNA Group no longer pursues any production or sales activities. The shares or other assets of its manufacturing entities were sold to private corporations. The mines and production equipment of SNA's mining companies, Bell Asbestos Mines Ltd. and Asbestos Corporation Ltd., were transferred to a limited partnership in which SNA Group owned a minority interest.

In 1989-90, le Ministère de Énergie et des Ressources (MER) provided SNA with $62 million, including $25 million for debt refunding.

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[3] "Quebecan Divestment," *Mining Journal*, 23 May 1986. See also, "Quebec set to privatize Soquem with planned offering to public," *The Globe and Mail*, 30 April 1986, and "Cambior needs gold properties to realize Quebec's ambitions," *The Globe and Mail*, 18 December 1986.

[4] "Asbestos group posts loss," *The Globe and Mail*, 16 December 1986.

Sidbec-Dosco Inc. Provincially owned steelmaker Sidbec-Dosco Inc. showed a solid recovery in 1985, due to increased activity in the auto industry and in non-industrial construction. Sidbec had recorded major losses in 1984 when its subsidiary, Sidbec-Normines Ltd., closed its iron ore mine at Fire Lake. The Sidbec-Normines pellet plant was sold for a nominal sum to La compagnie minière Québec Cartier, a subsidiary of the Pittsburgh-based United States Steel Corporation.

Société Générale de Financement (SGF). An aluminum project at Bécancour, Aluminerie de Bécancour Inc., began operations in 1986. The smelter, with a 230,000 t/y capacity, is 50.1 percent owned by Péchiney France, with the remainder owned by Alumax Corp. and the Québec Government's investment company, Société Générale de Financement (SGF). Péchiney bought more than 50 percent of SGF's share of production.[5]

A project headed by SGF is a proposed $900-million primary aluminum smelter to be built in Sept-Iles, Québec.[6] Kobe Steel Ltd. and Marubeni Corp. of Japan announced in 1989 that they would take shares of 13.33 percent (a $120-million investment) and 6.67 percent, respectively, in the project.

Hydro-Québec and Norsk Hydro Canada Inc.: magnesium metal plant. Hydro-Québec and Norsk Hydro Canada Inc., a wholly owned subsidiary of Norsk Hydro Norway, concluded negotiations on a 25-year power contract for a planned $450 million magnesium metal plant to be built in the Bécancour industrial park near Montréal. The plant, completed in 1989, was built beside the new Aluminerie de Bécancour aluminum smelter. Hydro-Québec gave Norsk Hydro a price concession in its early years. *Québec Industrial Development Corporation* also provided support.[7]

Bureau de Recherche sur l'Industrie de la Tourbe dans l'Est du Québec (BRITEQ). A public corporation established to assist the peat industry through research and development, BRITEQ initiated construction on three analysis laboratories in 1986. Plans for BRITEQ included the provision of marketing assistance for the peat industry, as well as conducting research services for physical chemical analysis of soils, substrates, waters and peat.[8]

Assistance to the Mineral Industry

Direct Assistance/Grants and Subsidies

Le Programme d'Accélération des Investissements Privés. This program was initiated following the 1982 recession in order to help sustain and stimulate private investment in the mineral industry. The funding was directed primarily towards the development of new mines, new processing facilities and productivity improvement. Over the life of the three-year program (1983-85), $120 million in government assistance was authorized for 18 mining projects, generating more than $700 million in new investment. The program was replaced in 1985 by the MDA's infrastructure development program (described in the following section) and by the introduction of new mining regulation and fiscal measures designed to encourage development.[9]

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[5] "April start for Bécancour," *Mining Journal*, 14 March 1986, p. 194.

[6] "Kobe taking share in smelter," *The Globe and Mail*, 4 November 1989.

[7] "Norsk Hydro to build metal plant in Quebec," *The Globe and Mail*, 21 October 1986.

[8] Energy, Mines and Resources Canada, "Peat in Quebec," *The Canadian Mineral Industry*, Monthly report, June 1986.

Institut de l'Amiante. In 1984, MER, the federal government and Canadian asbestos producers reached an agreement to contribute equally to the funding of the newly created Institut de l'Amiante. Over the course of 1984-88, $18.75 million was contributed by the three parties.[10] The Institute was created to counteract the growing anti-asbestos movement and to encourage the development – and acceptance – of asbestos-based products. MER contributed $1.25 million in each year of the agreement and in 1989 provided an additional $1.8 million.[11]

Sulphuric Acid Reduction Plant. In 1987, the federal and provincial governments each contributed $41.6 million toward the construction cost of a $125-million sulphuric acid reduction plant at Noranda's copper smelter at Rouyn-Noranda to help reduce sulphur dioxide emissions. The remaining $41.8 million was contributed by Noranda. The federal and provincial support was provided under the *Acid Rain Abatement Program*.[12]

Canada/Québec Mineral Development Sub-Agreement

The MDA, signed in July 1985, was a five-year, $100-million program with equal contributions from both governments. As with the other provincial MDAs, the agreement focused on ways to stimulate mineral resource development and to increase mineral industry spinoffs within Québec's economy. Some of the specific objectives of the agreement involved improvements to the base of geological information, assistance to the crysotile asbestos industry through research into new applications and health issues, infrastructure assistance to help the mineral production and processing industry become more competitive internationally, and improvements to the highway system. The distribution of funds for programs and projects was weighted towards geoscientific activities and infrastructure support, including

- geoscientific activities with over half delivered by contract by the private sector specialists – $34,750,000;
- asbestos research and development – $8,000,000;
- mineral development infrastructure – $42,000,000;
- access improvement for the iron ore industry by construction of a road which will join Fermont-Labrador City to Québec's road system – $15,000,000;
- public information – $250,000.

The Canada/Québec MDA was amended in 1986 to include several new programs in the five-year agreement:

- technical and economic studies and experimental activities;
- automated production and distribution systems for geoscientific documentation; and
- asbestos promotion.[13]

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[9] Québec, *Revue de l'Industrie Minérale du Québec*, 1985, p. 20-21.

[10] Ministère de l'Energie et des Ressources, *Rapport annuel 1985-1986*. See also, *Revue de l'industrie minérale du Québec*, 1985.

[11] Ministère de l'Energie et des Ressources, *Rapport annuel 1989-1990*, p. 53.

[12] "Ottawa, Quebec sign deal...," *The Globe and Mail*, 21 March 1987.

[13] Energy, Mines and Resources Canada, "General Review," *Canadian Minerals Yearbook, 1986*.

The following projects are examples of some of the activities funded through the MDA:

- In 1986, \$3.1 million was given to the Québec Cartier Mining Company for the development of an access road near Mont Wright. In 1987, an additional \$0.6 million was granted for completion of the project.
- Inco Ltd. and partner Golden Knight Resources Ltd. received infrastructure assistance of \$14.5 million during the 1987-89, funds contributed to the development of the Golden Pond East gold deposit in Casa Berardi township north of Rouyn-Noranda by funding an access road, a higher-capacity hydroelectric line, and modifications to the Normetal substation.[14]
- Cambior Inc. and Ressources Minières Rouyn were awarded grants for infrastructure work at their mining operations in northwestern Québec during 1989. The total assistance grants of \$1 million for Cambior and \$300,000 for Rouyn were provided through equal payments by the federal and Québec governments.[15]

The MDA was further amended in 1988 to add exploration assistance programs in the economically depressed regions of Chapais and Murdochville. The programs were implemented to mitigate the declining rate of employment in the asbestos sector. One of the strategies involved the diversification of the region's known mineral reserves by stimulating exploration for minerals other than asbestos.

By 1989, the final year of the MDA, \$107 million had been allocated among the 11 programs which made up the agreement. A new program (Program XI), centred on technological development, was created in the final year to provide financial assistance to mining companies wanting to conduct research programs through independent, university, or government research facilities. One of the projects funded under this program was the establishment of the Centre Canadien d'Automatisation et de Robotique Minière (CCARM) at McGill University, to examine the application of automation and robotics to mining processes.[16]

Geoscience Data Assistance

New mining offices were opened in Montréal and Sherbrooke in 1986, improving the accessibility of the mines ministry. In addition, all seven regional offices acquired a complete collection of microfiches on the province's geoscientific data. Previously, all geoscientific documents were located solely in Québec City.[17]

Direction générale de l'exploration géologique et minérale (DGEGM). This branch of MER is composed of two parts: geological research and mineral exploration assistance.

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[14] Canada/Québec, "News Release," 22 April 1987.

[15] "Two mining projects receive government grants," *The Northern Miner*, 7 March 1989.

[16] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*, p. 3.6.

[17] "Savoie – Quebec's new mines minister," *Canadian Mining Journal*, April 1986, p. 47.

In 1985, $8.8 million was awarded for geoscientific surveys and studies. The mineral exploration component of this program received $2.6 million to assist 43 mineral exploration projects. Starting in 1986, the geoscience portion of the program was partially funded through the MDA. In that year, $9.7 million was allotted under DGEGM to assist 55 geoscience programs and $4.6 million for 30 mineral exploration projects. For 1987 and 1988, this amount was raised to $11.3 for geoscience and $3 million for exploration assistance. In 1989, $11.2 million was provided for geoscience and $3.3 million for mineral exploration.

Québec Geoscience Centre. The federal and provincial governments reached a cooperative agreement in 1988 between a newly established Québec branch of the Geological Survey of Canada (GSC-Québec) and the Québec Georesources group of the Institut National de la Recherche Scientifique (INRS). GSC-Québec and INRS jointly created the Québec Geoscience Centre. The Centre, located in INRS's science complex, concentrates on modelling sedimentary basins and their associated mineralization, and examining sedimentary geochemistry and its applications. The federal GSC agreed to contribute $1 million in the first two years, increasing its support to $3.5 million per year by the third year of operations, for a total of $13.35 million over a five-year period. INRS contributed $1.6 million in each of the first two years and $2.5 million from the third year onwards, for a total of $10.85 million over five years.[18]

Research and Development

Centre de Recherches Minérales (CRM). Scientific and technical assistance is provided to the mining industry by MER through the CRM. The research conducted at CRM generally falls into one of the following catagories: mineral analysis, metallurgical research, or mining technology. Total expenditures of the CRM (including capital and operations) rose from $7.3 million in 1985-86 to $8.9 million in 1989-90. Typically, the Centre acts on specific proposals put forward by private firms. In 1989-90 it sponsored 172 projects valued at $4.17 million.

An example of the work carried out by the Centre is its participation in the *Mine Environment Neutral Drainage Program (MEND)*. The MEND joint research strategy is a national program which was established by the mining industry and the provincial and federal governments to develop the technology for safe management of mine waste storage sites.

Following a year of planning and organization in 1988-89, five areas were targeted in Québec under the MEND initiative, including Cambior's examination of "wet barriers" to neutralize acid wastes, Doyon's four-year research project into the effectiveness of dry barriers over waste dumps, and Noranda Minerals' projects related to the Waite Amulet tailings. In addition, the National Research Council of Canada in conjunction with the Québec Mining Association examined the capacity of membranes to recover heavy metal solubles in effluent.[19] The CRM has committed $400,000 per year until 1994 to the MEND program.[20]

[18] Energy, Mines and Resources Canada, "Notes for an Address by the Honourable Marcel Masse at a Press Conference Announcing the Establishment of the Québec Geoscience Centre," Québec City, 13 July 1988.

[19] Québec Mining Association Inc., *Annual Report 1989-90*, p. 17.

[20] Québec, Centre de Recherches Minérales, "Summary of the 1989-90 Activity Report."

Regional Development

Eastern Québec Development Plan. In 1986, the time-frame for a prospecting and development assistance program under the Eastern Québec Development Plan was extended until March 1991 for the Bas-Saint-Laurent and Gaspésie regions. Funded jointly by the federal Department of Energy, Mines and Resources and the provincial Ministry of Energy and Resources, the $5.5-million program had two main objectives: to promote prospecting and to encourage mine development in the areas. The program had four components:

- prospecting assistance providing a $50 daily allowance (up to six days a week for six months between 1 May to 1 November) to cover basic prospecting expenses;
- prospecting assistance up to $9,500 per year for expenses incurred through preliminary development of one or more claims;
- mining company assistance to hire prospectors (up to 75 percent of the salary and fringe benefits for a maximum of $10,800 per year) and for certain prospecting activities (up to 75 percent of actual costs to a maximum of $7,000 per year per prospector);
- assistance to individuals, mining companies and corporations that were not financed through flow-through shares or limited partnerships. The assistance involved a 50 percent refund on expenses incurred for preliminary exploration work completed when the program came into effect (17 December 1986). A limit of $50,000 was set for each project. Other services provided under the program included prospecting courses, technical counselling, a data bank, a prospecting guide, legal assistance, and technical documents and prospecting equipment.[21]

Chibougamau-Chapais regional assistance. The Québec government initiated a $13-million aid package in 1986 to assist the Chibougamau-Chapais gold/copper-producing region. Long-term assistance of $10.5 million was provided through provincially owned SOQUEM. The funding was to be used by SOQUEM for its exploration activities in the region. In the same year, a short-term assistance package of $2.8 million was provided to three copper mining companies in the Chibougamau-Chapais region (Camchib Mines, Falconbridge Copper, and Northgate Patino Mines) to help them increase their reserves. Without the assistance package, declining reserves would have forced Camchib Mines Corp. and Falconbridge Copper to close within 18 months.[22]

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[21] Canada/Québec, "The Financial Assistance Program for Prospecting in the Bas-Saint-Laurent and the Gaspésie," 1986.

[22] "Chibougamau, Chapais to receive assistance," *The Northern Miner*, 6 October 1986, p. 1.

Regulation of the Mineral Industry

Mining Regulation

Mining Judge. In June 1986, the position of Mining Judge was abolished. The function, originally instituted in 1886 to settle claim-holder conflicts, was transferred to a provincial court judge.[23]

Mining Act. Québec's new Mining Act was passed by the National Legislative Assembly in June 1987 and became effective in the fall of 1988. The changes were intended to update the regulations governing mining rights and the management of mineral resources, as well as encouraging investment and exploration. Other provisions related to claims and leases; for example,

- permit lengths for mining claims and prospectors' licences were extended to two and five years respectively;
- licence-holders were allowed to stake an unlimited number of claims per permit instead of being limited to five per permit;
- the term of a mining lease is 20 years and mining must begin within four years;
- companies, as well as individuals, can register claims in their own name.

The new mines minister, Raymond Savoie, indicated that the proposed legislation should hasten the return to the public domain of lands where no exploration or mining work is being conducted. The revisions set out rules on mineral management, such as production plans, record keeping, protection measures and a system for the optimal recovery of minerals. Powers of inquiry formerly held by the courts were granted to the Minister. The Minister was given the authority to suspend a mining operation if it were not using optimal methods of recovery of mineral substances.

Legal recognition was given to the acquisition of a claim by "map staking." Map staking (to replace physically hammering stakes on a claim) was introduced for use in the heavily populated areas south of the St. Lawrence River. Development licenses were abolished; instead, prospectors may renew their claims every two years if the assessment work has been completed.[24] Owners of claims can be authorized to take more than 50 tonnes of ore to demonstrate the feasibility of a mine without requiring a mining licence.

The new Mining Act (1987) was modified on 15 June 1988, with the adoption of Bill 5 which introduced a new category of permits was introduced by the Mining Act, i.e. a permit for the search of surface mineral substances. More than 230 such permits were issued or were being registered by 31 March 1989.

In the fall of 1989, work started on another bill to amend the Mining Act. The bill included provisions to ensure the rehabilitation and restoration of lands affected by mining activities. Under the proposed amendments, individuals or companies engaged in exploration or mining activities would be required to submit a rehabilitation and restoration plan of the affected lands to the Minister for approval. The Minister would have authority to order the work done at the expense of the individual or company which failed to meet the pre-

[23] "Quebec Mining Act is being overhauled," *The Northern Miner*, 6 October 1986, p. 1.

[24] *Ibid*. See also, "Quebec to overhaul its mines legislation," *The Toronto Star*, 11 December 1986; "New Quebec Mining Act to take effect in 1988," *The Northern Miner*, 21 December 1987, p. 17.

scribed requirements. The bill was to be tabled in the National Assembly in the spring of 1990.

Environmental Regulation

Sulphur Dioxide Emissions Reduction. In February 1985, the Québec government issued regulations requiring a 35 percent reduction from 1980 levels in the sulphur dioxide emissions from Noranda's Horne smelter by the end of 1989, with a further 15 percent reduction by the end of 1990. The Gaspé smelter was required to reduce its emissions by 65 percent by the end of 1990.

Workers' Compensation

In 1985, Québec replaced its 1977 Workmen's Compensation Act with *An Act Respecting Industrial Accidents and Occupational Diseases*. Under the new legislation, compensation is based on the income-replacement principle. Emphasis is also placed on an accident victim's right to rehabilitation and to return to work.

The period 1986-89 (1985 figures are not available) saw a slow climb in the assessment rates for workers' compensation in the mining sector. Ferrous and nonferrous mining rates each rose about 10 percent ($4.10 to $4.52 per $100 dollars of payroll and $6.98 to $7.68, respectively), while the rate for asbestos almost doubled, from $3.91 to $6.84.

Unlike the other provinces, Québec has taken a policy decision to permit unfunded liability in its compensation fund. Unfunded commitments reached almost $2.3 million in 1988, but dropped back to about $2 million in 1989, compared to about $400 thousand in 1980.

Trade Initiatives

International Trade

Canada-U.S. Free Trade Agreement. The Minister of Mines, Raymond Savoie, supported the October 1987 Canada-U.S. Free Trade Agreement as a way of deflecting rising U.S. protectionism, thereby providing the Canadian mineral industry with more secure markets. Noting the already-low tariff barriers for its mineral exports, Savoie stressed instead his concern over the increasing use of special-purpose protectionist legislation, and the excessive use of countervail and anti-dumping laws (as in the case of Saskatchewan potash and the Canadian soft-wood lumber industry).[25]

Asbestos. In 1989, Québec decided to take legal action in hopes of overturning a decision by the U.S. Environmental Protection Agency (EPA) to ban the use of asbestos in most products. The EPA announced that it would phase out the use of asbestos in the United States, beginning August 1990, on the grounds that this would prevent 1,900 cancer-related deaths by the turn of the century. Québec Mines Minister Raymond Savoie opposed the ban and noted that such assertions are without foundation and contradict world-wide scientific evidence on the proper use of asbestos. It was predicted that the ruling could ultimately cost Québec asbestos producers $40 million.

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[25] "Why a free trade agreement is good for Quebec's mining industry," *The Northern Miner*, 11 January 1988, p. 5.

An additional concern was a possible chain reaction, leading other countries to ban the material. Since exports to the United States were halted, Québec asbestos sales are distributed among the Pacific Rim (35 percent) Europe (22 percent), Asia (20 percent), and the rest in South America, North Africa and the Middle East. In 1989, the asbestos industry in Québec employed only 2,400 workers, down from 7,000 in 1980.[26]

Taxation Matters Affecting the Industry

General Taxation

The basic corporate income tax rate during the 1985-89 period remained constant at 13 percent. However, under the province's three-tiered corporate income tax structure, small businesses (which qualify for the federal small business deduction) were taxed at the reduced rate of 5.5 percent on eligible business income. Mining, exploration, and drilling for natural resources were among those incomes considered eligible.

In April 1985, the 25 percent tax credit for corporate or individual investments in Sociétés d'entraide économique (corporations for the development of Québec business) was eliminated. The tax credit was replaced by tax deductions for individual investors and tax credits for private venture-capital company investors in private investment companies (known as SPEQs: Société de Placements dans l'Entreprise Québécoise).[27]

As of 2 May 1987, the refundable tax credit on wages and salaries of employees of Québec businesses engaged in research and development was increased from 10 to 20 percent. For research and development projects undertaken jointly with Québec universities, corporations became eligible for a refundable tax credit of 40 percent on all project expenditures, including wages and capital expenses.[28]

To assist the financing of health services in Québec, a three-percent tax was levied on employer payrolls. In 1989, the existing payroll tax surtax of 7.25 percent was raised to 12 percent, effectively raising the health tax rate to 3.36 percent. The surtax on corporate income tax was also raised from 7.25 to 12 percent.[29]

It was announced in the 1 May 1986 budget that the employee stock ownership plan would be enhanced, to encourage employees to invest in their employers' companies, by allowing an additional 25 percent deduction for shares which are eligible under the Québec Stock Savings Plan. The amendment received Royal Assent on 19 December 1986.

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[26] "Quebec planning to fight U.S. asbestos ban," *The Globe and Mail*, 7 July 1989. See also, "Quebec to challenge U.S. ban on asbestos," *The Northern Miner*, 17 July 1989, p. 1.

[27] Canadian Tax Foundation, *Provincial and Municipal Finances 1985*, p. 128.

[28] Canadian Tax Foundation, *Canadian Tax Journal*, May/June 1987, p. 792.

[29] Canadian Tax Foundation, *Provincial and Municipal Finances 1989*, p. 10:54 and 14:15.

Mining Taxation

On 23 April 1985, the provincial budget proposed a number of significant changes to the Québec Mining Duties Act and income tax legislation. One of the more important changes to the *Mining Duties Act* was the replacement of the progressive rate schedule with a flat 18 percent tax on profits from mining operations. Effective 23 April 1985, the forward-averaging rules which had been part of the progressive rate formula were no longer in effect. Other changes included

- replacement of the basic annual exemption with a $90,000 tax credit against mining duties payable. Unused credits may be carried over the following three years. This was equivalent to an exemption of $500,000 on mining income, previously $250,000;
- from April 24, if an annual loss was sustained from mining operations, a refundable tax credit was available equal to the lesser of 18 percent of the loss or 18 percent of eligible expenditures – that is, exploration and development expenditures, and depreciation claimed during the year;
- losses not claimed as a refundable tax credit could be carried over the last three years and the following seven years;
- in the case of flow-through shares, the expenses would have to be incurred on properties in Québec owned by an "eligible corporation" (one whose principal activity is exploration or development and not production, and which was not controlled by another party uninvolved in exploration or development activities).

In December 1986, the Québec Minister of Finance announced the elimination of the 66 2/3 percent additional allowance for exploration funds spent in Québec by individuals. The existing mineral exploration depletion allowance of 33 1/3 percent for Québec income tax purposes was retained.

In response to the 1988 phase-out of the federal Mining Exploration Depletion Allowance program, Québec reinstated the Québec Exploration Account Deduction for expenditures incurred between 30 June 1989 and 1 January 1990. Mining (and oil and gas) exploration expenses became eligible for an income tax deduction of 133 1/3 percent for money spent on underground work and 166.6 percent for funds spent on surface exploration work. The assistance was provided only for exploration carried out in the province by companies that were not part of any corporate group operating a mine.[30]

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[30] "Quebec plans to introduce new explorer incentives," *The Northern Miner*, 7 March 1988.

11. New Brunswick

Introduction

Industry Trends

> Mining is New Brunswick's second-largest industry, directly employing an average of 5,000 people each year. The most valuable minerals are zinc, potash, lead, silver, coal, antimony and peat, with zinc accounting for over 50 percent of the total value of production. After Québec, New Brunswick is Canada's largest harvester of peat. Depressed metal and commodity prices resulted in declining mineral production values in 1985 and 1986. By 1988, however, the value of mineral production increased dramatically to $910 million, but dropped over $40 million in 1989 to $864 million.[1]

Brunswick Mining and Smelting Corporation's (BM&S) lead/zinc/silver operation in Bathurst recorded losses throughout 1985 and 1986, but was able to show a profit in 1987 after reducing its workforce and emphasizing increased operational efficiency. Improved prices and markets also helped. In February 1989, Noranda and BM&S announced the reopening of the Heath Steele mill, expecting full production was expected in 1990.[2]

Denison-Potacan Potash Company, New Brunswick's second potash mine, began production near Sussex in July 1985. The Durham Mine near Fredericton, which produced 10 percent of the western world's output of antimony, closed, reflecting a deterioration in world prices for antimony.[3]

Discoveries in the area northwest of Bathurst led to renewed interest in gold, and in 1986 New Brunswick became a gold-producing province with the pouring of its first gold bar in June at Cape Spencer (Gordex Minerals Limited). Falling gold prices, however, forced the company to cut back its operations in 1989.

New Brunswick has one coal producer, N.B. Coal Ltd. in the Minto-Chipman area, which supplies coal to electrical generating facilities at Dalhousie and Grand Lake. The province's peat sector was stimulated by support from the Canada/New Brunswick Mineral Development Agreement.

A burst of exploration activity in 1987-89 saw exploration expenditures increasing, with emphasis on gold and base metals.

Highlights of Government Initiatives

During the latter half of the decade, the provincial government implemented a number of changes. A new provincial *Mining Act* came into effect in July 1987, after extensive consultation with industry and concerned individuals.[4]

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[1] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*.

[2] Noranda owns 75 percent of Heath Steele and BM&S owns 25 percent.

[3] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989*, p. 3.5.

[4] New Brunswick Information Service, *The Week-In-Review*, 5 March 1987, p. 5.

A Minister of State for Mines, Department of Natural Resources and Energy, was appointed in June 1989, underlining the importance of mining to the province. In the same year, a new potash policy was formulated to encourage prospecting activity.

The five-year $22-million Canada/New Brunswick Mineral Development agreement, signed in 1984, was carried over until March 1990. Negotiations were underway by then for a subsequent MDA.

By the end of the decade, policy initiatives were characterized by concerns over watersheds, "ecological reserves," environmental impacts, and improvements to the mine approval process,[5] while promoting investment in mineral exploration and development.

New Brunswick's Mineral Exploration Stimulation Program, the MDA, the appointment of a Mining Commissioner, and other policy initiatives contributed to heightened exploration activity in the latter half of the 1980s.

Mineral-Related Task Forces and Studies

A *Tripartite Task Force* was established in early 1985 to examine the possibility of re-opening the zinc/lead/copper mine at Heath Steele, near Newcastle. The task force included representatives of Heath Steele Mines Ltd., the United Steelworkers of America and the provincial Department of Natural Resources and Energy.

Assistance Initiatives

Direct Assistance/Grants and Subsidies

Mineral Exploration Stimulation Program. Set up in 1988, the program had a fund of $150,000 which provided individual grants of $10,000. Many of the proposals focused on gold in the Bathurst area, although some interest was also shown in base metal exploration. The program was considered so successful that an additional $50,000 was allocated.

Mine Development Assistance. In 1989, the provincial government, the Westpac Banking Corp, and the National Australia Bank agreed to provide funds up to $8 million to East West Minerals for development of a mine. The mine would be developed on the company's Caribou zinc/lead/silver property (in Restigouche County), where operations were expected to resume in December. A more productive mining method – long hole open stoping – would replace cut-and-fill stoping, and some modifications would be made to the mill.[6]

Canada/New Brunswick Mineral Development Agreement (MDA). The five-year MDA, signed in 1984, was extended until March 1990. The $22.3-million agreement was divided into four components: Geoscience, Mining and Minerals Technology, Economic Development, and Public Information, Evaluation and Administration.

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[5] New Brunswick, Hon. Edmond Blanchard, Minister of State for Mines, "Notes for an Address," Minerals Division 14th Annual Open House, Fredericton, 21 November 1989.

[6] "Caribou Reappraisal," *Mining Journal*, 17 November 1989, p. 409.

Under the geoscience component, studies were carried out in the areas of metallic minerals deposits, regional geology, geochemistry and geophysics. For example, $214,000 was granted for a geological study of orebodies at the Heath Steele mine near Newcastle which had ceased underground operations in 1982. The study was initiated to improve the economic viability of the mine by increasing the ore reserves,[7] and geologists from the University of New Brunswick were successful in locating new ore reserves.[8] In 1987, the Noranda group carried out a $4-million underground exploration program on the Stratmat Boundary Property. In February 1989, Noranda and BM&S announced the reopening of the Heath Steele mill, processing ore from the Stratmat property, with full production expected in 1990.[9]

A new $250,000 drill-core storage facility, funded by the MDA, was officially opened in Sussex in November 1986.[10]

The Mining and Minerals Technology Program included studies on a ferric chloride leach process for base metal sulphides, and commodity-specific studies related to manganese, aggregates, potash, coal and peat.

In June 1986, the MDA was amended to allow the implementation of two new federally funded programs: the *Mineral Investment Stimulation Program* and the *Mineral Processing Investigations Program*. The funds to deliver and administer these programs were transferred to the province.

Mineral Investment Stimulation Program (MISP). MISP provided up to $1 million until 31 March 1989 to stimulate private-sector investment in the development of New Brunswick's mineral industry. The program focused on three areas: process optimization, new product development and extension of reserves.[11] Dominion Explorers, for example, received $150,000 under MISP in 1987 to locate additional reserves of antimony at the Durham Mine and to assess the potential of a gold deposit in the area.[12]

Mineral Processing Investigations Program (MPIP). MPIP provided $400,000 to fund research for improving process recoveries of minerals and metals.[13] The MPIP program included

- physical/chemical extraction of phosphate and rare earths;
- a chemical refinery for low-tonnage, high-revenue metals (rare earths);
- dump leach extraction of manganese;
- an antimony oxide production plant;
- ammonium paratungstate production facility;
- synthetic magnesium oxide production;
- heap leach of gold ores;
- evaluation of technology for potassium sulphate manufacture to encourage value-added processing of potash;
- physical upgrading of ilmenite (titanium ore).[14]

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[7] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1986*, p. 3.3.

[8] New Brunswick Information Service, *The Week-In-Review*, Vol. 8, No. 32, 21 August 1986.

[9] Noranda owns 75 percent of Heath Steele and BM&S owns 25 percent.

[10] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1986.*

[11] New Brunswick Natural Resources and Energy, *Annual Report 1987-1988*, p. 29.

[12] New Brunswick Information Service, *The Week-In-Review*, Vol. 9, No. 40, 8 October 1987.

[13] New Brunswick Information Service, *The Week-In-Review*, Vol. 8, No. 22, 12 June 1986.

[14] New Brunswick Natural Resources and Energy, *Annual Report 1987-88*, p. 29.

Geoscience Data Assistance

Mineral Exploration Stimulation Program. In 1988, the province increased the budget of the Geological Surveys Branch of the Department of Natural Resources and Energy by over 50 percent. The increase allowed the department to establish a new Mineral Exploration Stimulation Program to help finance the exploration projects of individual prospectors, and to hire a geophysicist, a geochemist and a metallic specialist.[15]

Research and Development

Mine Environment Netural Drainage (MEND). In conjunction with BM&S, the province funded the Heath Steele Waste Sulphide Rock Study under the MEND program to study acid mine drainage. The goal was to develop methods for reclamation of acid-generating waste-rock sites in northeast New Brunswick.[16] MEND is a co-operative research program which is organized, financed and administered by the Canadian mining industry, the federal government (through CANMET) and the provincial governments of British Columbia, Manitoba, Ontario, Québec and New Brunswick.

Sulphation Roast Leach (SRL) ore-processing plant. After ten years of research and laboratory testing, the world's first SRL ore-processing pilot plant was officially opened at Morrison's Cove on May 10, 1985. The pilot plant was a $22-million project funded jointly by the federal and provincial governments. It was hoped that New Brunswick metal mines, which had been losing up to 35 percent of potential recoveries, would be able to reclaim up to 80 percent of this lost metal using the SRL method. The process was expected to boost the profitability of existing mining operations and to demonstrate how marginal operations can become economic. Rights and patents for the SRL systems are held by the Province of New Brunswick. The process aroused considerable interest in mining centres in North America, Portugal, Indonesia, Finland, China, and Australia. However, although the principle of the process was shown to have potential in the treatment of a range of New Brunswick base metal concentrates, the pilot plant data and the resultant analyses were not successful in proving the economic viability of the process for commercial applications.[17]

New Brunswick Electric Power Commission's experimental generating plant. Research to reduce sulphur dioxide emissions from coal was conducted at the Chatham thermal electric generating plant throughout 1986. The tests included combining oil shale from Albert Country with coal and burning it in a circulculating fluidized-bed combustion chamber.[18]

Peat Research and Development Centre. The Department of Natural Resources and Energy, in conjunction with the University of Moncton, established a Peat Research and Development Centre in Shippegan.

Rock Mechanics Program. Potash Company of America and the provincial government funded a project in 1987 designed to utilize New Brunswick's potash resource "to its fullest potential" while ensuring the safety of the mine workers.

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[15] "Mining Issues in New Brunswick," *The Northern Miner*, 2 January 1989.

[16] New Brunswick, Hon. Edmond Blanchard, Minister of State for Mines, "Notes for an Address," Minerals Division 14th Annual Open House, Fredericton, 21 November 1989.

[17] New Brunswick Information Service, *The Week-in-Review*, Vol. 7, No. 19, 9 May 1985.

[18] New Brunswick Natural Resources and Energy, *New Brunswick's Natural Resources: 150 Years of Stewardship*, 1986, p. 173.

Regulation of the Mineral Industry

Land Access and Tenure

Potash Policy. In 1989, the government announced that companies or individuals would be allowed to obtain a "licence to search" for potash. The licence covered an area of at least 10 thousand hectares on a first-come, first-served basis.[19]

Mining Regulation

Mining Act. In 1986, a new provincial Mining Act was introduced. It included a regulation requiring new metal mining companies to process their ore in New Brunswick unless they could demonstrate why it was not feasible to do so. The Act improved protection for private landowners during mineral exploration, including a requirement for better information during claim-staking activities, and negotiation of compensation for land use and/or damage *before* commencement of operations. Prospecting licences were extended to the lifetime of the holder; mining claims and leases could be renewed indefinitely; and mining licences were abolished.[20]

Environmental Regulation

Standing Committee on Mining and Environment. A Standing Committee was established in 1989 to "facilitate and ensure consistency in the review processes" of the Department of Natural Resources and Energy and the Department of Environment. One of the tasks of the committee was to "overhaul" and "streamline" the mine approval process, which was thought to be confusing and cumbersome.[21]

Environmental Impact Assessment (EIA) Regulation. The EIA Regulation became law in 1987. All new commercial mining projects are now screened to determine if a full EIA study is warranted. To date, several mining projects have been screened, and Marshall Minerals Corp.'s Restigouche zinc/lead/silver project was required to undergo a full EIA study.

Workers' Compensation. The New Brunswick WCB commissioned a report of its operations which was presented to the provincial government in early 1980. A new Workers' Compensation Act became effective in January 1982.

The funding-to-liabilities ratio of the New Brunswick WCB dropped below 100 percent for the first time in 1984. In 1985, the reported unfunded liability increased to $39.8 million, up from $5.6 million the previous year, following an actuarial review of the fund. The ratio fell to 71.2 percent in 1986, and rose to 75.0 percent by 1989.

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[19] New Brunswick, Hon. Edmond Blanchard, Minister of State for Mines, "Notes for an Address," Estimates Debate, New Brunswick Legislature, 19 April 1990.

[20] New Brunswick Natural Resources and Energy, *New Brunswick's Natural Resources: 150 Years of Stewardship*, 1986, p. 172.

[21] New Brunswick, Hon. Edmond Blanchard, Minister of State for Mines, "Notes for an Address: Estimates Debate, New Brunswick Legislature," 19 April 1990.

Major changes to the WC system in New Brunswick in the latter part of the 1980s included the following.

- 1985: A merit rating system became operational. It applied to all employers who were active in the year preceding assessment. Rebates or surcharges were based on data collected for each firm over three years.
- 1986: A new format was used for rate-setting changes to ensure that costs were shared equally by all employers. Under the new format, major variations in rates were to be smoothed out over a number of years.
- 1987: A report entitled "A Review of the New Brunswick Workers' Compensation Board" was released and its recommendations implemented. These recommendations included a restructuring of the corporate board and a new process which established an appeals board as the last level of appeal.
- 1989: Bill 62, amending the Workers' Compensation Act, was proclaimed in November. This legislation introduced a new Experience Rating System which based assessments on the employer's accident experience. It also provided increased benefits and pensions for injured workers.

Taxation Matters Affecting the Industry

General Taxation

The 31 May 1985 budget announced that, effective 1 January 1986, small business corporations with incomes of $100,000 or less would be eligible for a tax credit which would reduce their corporate income tax rate from 9 percent to 5 percent for a three-year period. The announcement was implemented through Bill 90, which amended the Income Tax Act and was given Royal Assent on 27 June 1985.

The 6 April 1988 budget announced that, effective 1 January 1988, the corporate tax rate would be raised from 15 to 16 percent. This change would affect only businesses with an income over $200,000.

Bill 71, to enact the *Stock Savings Plan Act*, received Royal Assent on 3 November 1989. Under the revised Act, eligible individuals can deduct from income tax payable the tax credit provided under the Stock Savings Plan, beginning with the 1990 tax year.

Mine Reclamation Fund. The New Brunswick government in 1989 joined industry in an attempt to persuade the federal government to revise the federal income tax legislation. It was suggested that contributions to a trust fund for mine reclamation be made deductible to the full extent of any one year's contribution to the fund. Through the fund, mining companies could regularly contribute a fixed amount for mine-site rehabilitation.[22]

[22] New Brunswick, Hon. Edmond Blanchard, Minister of State for Mines, "Notes for an Address," Minerals Division 14th Annual Open House, Fredericton, 21 November 1989.

Gasoline Tax. In 1987, an Act amending the *Gasoline and Motive Fuel Tax* (Bill 27), replaced the system of tax-exempt gasoline with a system of refund by end-use, effective January 1, 1988.[23] The Act also enabled the minister to refund the gasoline tax upon application by those who formerly could purchase tax-free marked fuel.

Mining Taxation

The May 1985 budget announced that a planned graduated-rate tax structure on mining profits under the *Metallic Minerals Tax Act* would not be implemented. After study and consultation with industry, the government decided that the existing flat rates of 2 percent on net revenue and 16 percent on net profit would remain in place. Consideration was given instead to changing other aspects of the Act, such as rates of depreciation and exploration allowances.[24]

The *Mining Act* (Bill 49) was amended in 1986, clarifying that sand, gravel, clay and soil removed from Crown lands are minerals owned by the Crown. A person who had worked a sand, gravel, clay, or soil deposit before 18 May 1986 would not be required to pay any royalty or rent in respect of that deposit.[25]

The amended *Metallic Minerals Tax Act* (Bill 16), was passed 27 June 1987, effective 1 January 1988. Among the numerous amendments were provisions which would

- repeal the penalty tax on processing done outside New Brunswick;
- ensure that profits from hedging of mineral sales are included in "gross income";
- clarify the period during which a mine operator must begin paying a tax of two percent of net revenue;
- grant mine operators one tax credit equal to 25 percent of the eligible process research expenditure;
- clarify the eligible deductions for the calculation of net revenue and net profit;
- increase various other penalties under the Act;
- add and amend various definitions and make technical changes relevant to mineral taxation.

A "Licence to Search, Development Permit, and Lease" Regulation under the *Bituminous Shale Act* was issued setting out licencing rules and fees.[26]

The *Metallic Minerals Tax Act* was amended again in 1989, altering the treatment of deductions for unsold output. The amendment (Bill 20) received Royal Assent on 19 May 1989.[27]

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[23] For more information, see Millie Goodman, *Tax Memo: 1987 Tax Developments*, Canadian Tax Foundation, No. 72, March 1988, p. 133.

[24] New Brunswick, *Province of New Brunswick Budget 1985-1986*, May 1985, p. 17.

[25] Millie Goodman, *op. cit.*, p. 116.

[26] *Ibid.*, pp. 135-136.

[27] Millie Goodman, *Tax Memo: 1989 Tax Developments*, Canadian Tax Foundation, No. 76, March 1990, p. 109.

12. Nova Scotia

Introduction

Industry Trends

> Coal and industrial minerals constitute the bulk of mining in Nova Scotia. Mineral production includes coal, anhydride, gypsum, barite, salt, aggregates, limestone, dolomite, tin, clay and shale, silica, peat and construction materials. With recoverable reserves of nearly one billion tonnes, coal plays a significant role in the Nova Scotia economy, and Nova Scotia is Canada's largest producer of gypsum. Canadian primary tin mine production came from one open-pit mine in East Kemptville until 1991. The value of mineral production was estimated at $327 million in 1985, rising to $443 million by 1989. At the end of the decade, approximately 5,600 people were employed in the mineral industry, 3,000 of them in the coal sector.[1]

The mineral industry is an important part of the Nova Scotia economy. Coal is Nova Scotia's most important mineral, produced mainly for domestic power generation. Coal production increased in 1987 with the re-opening of the Phalen Mine. The plant had been expanded, the infrastructure modernized, and new equipment installed. In 1988, the industry received a boost with the planned development of an underground mine (Westray Coal Inc.) in Pictou County. The mine will produce low-sulphur coal and is being developed for use at a new thermal generating station in Trenton.[2] In 1989, the proposed Point Aconi coal-fired generating plant was to undergo an environmental review under the new provincial environmental legislation.

Nova Scotia's second most important mineral, gypsum, did well in the late 1980s. New prospects for agricultural gypsum products were being developed to further broaden the markets.

Rio Algom started production at its East Kemptville tin mine in October 1985, going into full production in 1986. After experiencing severe and unexpected difficulties due to the collapse of world tin markets, the company relinquished control of the mine, but by 1988 was able to buy it back. Improvements to the mill, increased recoveries of tin, and stronger tin prices resulted in an increase of 51 percent in tin concentrate production in 1987.[3]

Exploration expenditures rose dramatically between 1985 and 1988. As in the other provinces, the 1985-88 surges were attributed to the federal flow-through share program, the Mineral Development Agreement, and strong gold prices. In June 1987, Seabright poured the first gold bar at its Gays River mill, refined from ore from its Forest Hill property.

In 1989, exploration expenditures declined to $15 million from an estimated $40 million in the previous year. The drop was attributed to weaker gold prices and changes to the federal flow-through share program, and the resulting financing difficulties for junior exploration companies. Nevertheless, underground exploration did continue on a number of gold properties.[4]

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[1] Nova Scotia Mines and Energy, "News Release," 28 June 1990.

[2] Nova Scotia, *Budget Address 1988-89*, 15 April 1988, p. 3.

[3] *Ibid.*

Highlights of Government Initiatives

The government was active in a number of mineral-related activities from 1985-89, particularly through the $26.9-million Mineral Development Agreement. In 1985, the federal Department of Energy, Mines and Resources and the provincial Department of Mines and Energy announced a $1.3-million Mineral Investment Stimulation Program. The new program was designed to provide assistance to individuals and companies to foster the provincial mineral industry.[5] When the MDA expired in 1989, negotiations were underway for a renewed $9-million agreement.

In 1985, the provincial government formed a Task Force on Investment and Taxation which conducted an extensive review of the province's tax system. A number of its recommendations were implemented.

The federal Minister of Energy, Mines and Resources and the Nova Scotia Minister of Mines and Energy signed a $6.7-million agreement in 1986 on energy conservation and alternative energy. The National Conservation and Alternative Energy Initiative was introduced to protect Canada against possible oil price shocks.[6]

Mineral-Related Task Forces and Studies

Task Force on Investment and Taxation: Nova Scotia Stock Savings Plan. The government established the Task Force to conduct an extensive review of the province's tax system. In 1986, the government decided to implement a number of its recommendations, including the creation of a Nova Scotia Stock Savings Plan which would encourage investment in the province by providing a tax credit to individuals purchasing shares in Nova Scotia companies.[7] The plan will be effective for the taxation years 1987 through to 1992.[8]

Assistance to the Mineral Industry

The Canada-Nova Scotia Mineral Development Agreement (MDA). Program elements of the five-year, $26.9-million MDA included geoscience, minerals technology, development studies, firm-specific assistance, and public information. Geological work focused on copper, lead, zinc, uranium, coal, and oil shales. Industrial minerals were the focus of the minerals technology studies. The goal of the technology and development studies was to help Nova Scotia minerals to become competitive in domestic and international markets. Firm-specific assistance programs provided funding for product marketing studies and to assist firms with productivity audits. Public information, program management, and administration and evaluation programs were funded under the agreement.[9]

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[4] Nova Scotia Mines and Energy, "News Release: Year End Review and Forecast – Minerals," by Hon. Jack MacIsaac, Minister of Mines and Energy, Halifax, 1989.

[5] Nova Scotia Mines and Energy, "Year End Review," Hon. Joel R. Matheson, Q.C., Minister of Mines and Energy, 1986.

[6] Canada, "News Release: Conservation and Alternative Energy Agreement Signed," 14 May 1986.

[7] Nova Scotia, *Budget Address 1986-87*.

[8] Nova Scotia, *Budget Address 1987-88*, pp. 8-9.

[9] Canada and Nova Scotia, *Canada-Nova Scotia Mineral Development Agreement 1984-89*, 1 April 1984.

Mineral Investment Stimulation Program (MISP). In October 1986, this $1.3-million incentive program was introduced under the MDA to provide assistance for the following types of projects:

- advanced exploration or assessment of established mineral deposits;
- mineral-processing activities;
- market studies and promotion;
- specific studies related to production and management systems.

MISP did not cover exploration for new deposits or for development of petroleum or natural gas resources.

Although the MDA expired in 1989, negotiations for a new two-year MDA were completed in the same year. This $9-million extension allowed for the continuation of exploration and development programs. EMR was also committed to carry out several mineral projects in the province.[10] One of the projects proposed under the new MDA was the identification of opportunities for the mineral industry resulting from the Canada-U.S. Free Trade Agreement.[11]

The MDA funding for research and development included $500,000 for an engineering study of uses for fly ash, which is produced as a byproduct of the Nova Scotia Power Corporation's coal-fired electrical generating stations. Over the five-year period, comprehensive laboratory and field tests were planned to determine the suitability of various mixes of fly ash and cement in a number of actual concrete environments.

Research and Development

Coal Research Agreement. In 1989, the province signed a $590,000 agreement with the Cape Breton Development Corporation and the Nova Scotia Power Corporation for coal research, development, and technology demonstration. A further $250,000 was committed by EMR for complementary coal research and development.

Regulation of the Mineral Industry

Land Access and Tenure

Nova Scotia Uranium Inquiry. A report considering all aspects of uranium mining in Nova Scotia was submitted to the government on 20 January 1985. The government acted on the report's recommendations and took the following initiatives:

- the existing moratorium on uranium exploration was extended, at least until January 1990;

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[10] Nova Scotia Mines and Energy, "News Release: Year End Review and Forecast – Minerals," by Hon. Jack MacIsaac, Minister of Mines and Energy, Halifax, 1989.

[11] Nova Scotia Mines and Energy, "News Release," 16 November 1989.

- an interdepartmental committee from the Departments of Mines and Energy, Environment and Health was formed to establish a regulatory requirement for defining a threshold uranium mineralization concentrations. No exploration and mining activities would be permitted on properties with uranium concentrations above the threshold, which was set at 100 ppm. The committee also monitored development in management procedures relating to all aspects of the uranium mining cycle;
- properties held under the existing moratorium with uranium levels below the threshold were released for all other exploration activity;
- before any consideration is given to altering or removing the moratorium to permit uranium mining in the future, any mining project will be required to meet all relevant provincial mining, environmental and health legislative requirements;
- the government continued to monitor research and technology developments related to the safe abandonment of mine/mill tailings;
- prior to making any changes in the conditions of the moratorium, there would be an opportunity for further public review and assessment.

While reporting that he had found nothing detrimental in exploration for uranium, Judge McCleave concluded that the moratorium should continue. He also recommended that, should uranium ever be mined in the province, it should be used only for peaceful purposes such as power generation. The Nova Scotia government, however, indicated that it had no plans to use uranium for provincial power generation.

Environmental Regulation

Task Force on Hazardous Waste Management. The provincial Department of the Environment formed this task force in 1987 as part of a national federal-provincial initiative. In 1988, the provincial government acted on its recommendations, establishing a section of the Department of the Environment to deal exclusively with the issue of hazardous waste. In 1989, new environmental regulations were drawn up to deal with asbestos waste, petroleum storage, waste oil and the storage of PCBs.[12]

The Nova Scotia Power Corporation Pollution Abatement Program was established to help the province meet its obligations under the Canada-Nova Scotia Acid Rain Agreement. By using low-sulphur Pictou County coal in the new and existing generating plants of Trenton and by utilizing fluidized-bed combustion to remove up to 90 percent of the sulphur from the Prince Mine coal, Nova Scotia Power Corporation expected to be able to meet its obligations under the program.

Environmental Assessment Act. A new Environmental Assessment Act was proclaimed 14 July 1989.[13] Regulations complementing the Act required that "environmentally sensitive" projects undergo a review in the early planning stage. Public consultation was made mandatory for a number of areas, including energy projects above 10 megawatts.[14]

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[12] Nova Scotia, *Budget Address 1989-90*, presented by the Honourable Greg Kerr, Minister of Finance, p. 9.

[13] Nova Scotia Mines and Energy, "News Release," 29 June 1989.

[14] Nova Scotia, "Information Service," 29 June 1989.

Health and Safety Regulation

Workers' Compensation. The Nova Scotia accident fund was one of only four in Canada to remain in a position of surplus throughout the 1980s (the others being the two Territories and Saskatchewan). In 1981, the province's Workers' Compensation Act introduced a major change which made it much easier for coal miners to claim silicosis benefits and greatly increased the number of workers eligible for this benefit.

Developments between 1985 and 1989 included the following:

- 1987: A new rating system was introduced, with an increased number of sub-groups. The *Employer's Incentive Program* was introduced, creating financial incentives for employers to create training and job opportunities for injured workers.
- 1988: There was a large increase in compensation payments, to $52.7 million, up from $23.7 million the previous year. This was mainly a consequence of adjustments to liability for outstanding claims, but also the result of an increase in long-term rehabilitation claims.
- 1989: On 21 November 1989, the provincial government released a White Paper on workers' compensation, delineating the government's proposal to improve the delivery of benefits in Nova Scotia.[15]

Trade Initiatives

Intra-/Interprovincial Marketing

In 1985, The Nova Scotia Power Corporation announced plans to convert the 150-megawatt No. 2 electric generating unit at Point Tupper from oil to coal. It was expected that the converted unit would be in service by 1 December 1987.

During 1989, the Nova Scotia Power Corporation began site preparation for a new generating station at Point Aconi which will utilize circulating fluidized-bed technology, which removes over 90 percent of the sulphur from the coal used at the plant. The provincial government assured the public that Point Aconi would be "subject to a full environmental assessment" under the new Environmental Assessment Act proclaimed in July.[16]

Coal-water fuel (CWF). A technology was developed that enables coal to be mixed with water, allowing the resulting slurry to travel by pipeline. The coal-water fuel was used in a steam boiler in Hantsport, as part of a cooperative project launched by CANMET, the Nova Scotia Government, the federally owned Cape Breton Development Corporation, and the Minas Basin Pulp and Power Co. The technology could provide a boost to the Canadian coal industry, as pipeline transportation of CWF would be cheaper and environmentally safer than existing methods of transporting coal.[17]

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[15] Nova Scotia Labour, "News Release," 21 November 1989.

[16] Nova Scotia Mines and Energy, "News Release," 29 June 1989.

[17] Energy Mines and Resources Canada, "New Coal Technology for Process Industries," *Newsletter*, April 1989.

The National Conservation and Alternative Energy Initiative. The federal Minister of Energy, Mines and Resources and the Nova Scotia Minister of Mines and Energy signed a $6.7-million agreement in 1986 on energy conservation and alternative energy that promoted the use of coal rather than imported petroleum fuels. The initiative was introduced to protect Canada against possible oil price shocks.[18]

Integrated gasification combined cycle technology (IGCC). Under the Canada-Nova Scotia Oil Substitution and Conservation Agreement, the province undertook two projects to assess IGCC technology for coal-fired electricity generation. IGCC holds the potential to cut carbon dioxide and nitrogen oxide emissions, making coal more attractive as a fuel.

International Trade

The Canada-U.S. Free Trade Agreement was welcomed in 1988 by the provincial Minister of Mines and Energy, who stated that free trade would have a positive impact on the provincial mineral and energy sector.[19] With its industrial mineral endowment and deep water ports, the mineral industry in Nova Scotia may benefit from the agreement.

Taxation Matters Affecting the Industry

General Taxation

The 18 April 1986 budget announced that newly incorporated small businesses were to be eligible for a two-year provincial income tax holiday during their first two years of operation. The measure was implemented in May.

The 1989 May budget announced income tax changes which would enable a corporation to relinquish a research and development tax credit in order to take advantage of a federal investment tax credit.[20]

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[18] Canada, "News Release: Conservation and Alternative Energy Agreement Signed," 14 May 1986.

[19] Nova Scotia Mines and Energy, "News Release," 16 November 1988.

[20] Millie Goodman, *Tax Memo: 1989 Tax Developments*, Canadian Tax Foundation, No. 76, March 1990.

13. Prince Edward Island

Introduction

As Canada's smallest province, with a land area of approximately 5,660 square kilometres, Prince Edward Island has limited mineral activity. The geology of the island is made up of five major sedimentary rock types with one small surface occurrence of igneous rock in the form of a dyke or sill on George Island in Malpeque Bay.[1] Although the presence of uranium has been recorded at various points on the island, the only minerals with current commercial value are sand and gravel. The island's economy is primarily based on agriculture, fishing and tourism.

Assistance Initiatives

The main activity of the Minerals Branch of the P.E.I. Department of Energy and Forestry from 1986-88 was an evaluation of the province's sand and gravel resources. This study was conducted under the 1986-1988 Canada/Prince Edward Island Subsidiary Agreement. The three-year, $300,000 agreement was 80 percent funded by the federal government and 20 percent by the province. The province had responsibility for carrying out the terms of the agreement. During the initial year of the program, the inventory phase was completed; it served to identify and record the known areas of aggregate production. Research and mapping activities were also conducted in an effort to identify further potential sources of aggregate deposits.[2]

The agreement was intended to assist Prince Edward Island in becoming self-sufficient in mineral aggregate (sand and gravel) production. The second phase of the program conducted in 1987 moved from the previous, more general, survey to a more specific examination of aggregate sites and the quality of deposits. As a result of the studies undertaken, the boundaries of many deposits in the eastern half of the province have been extended.[3]

The third and final phase of the Canada/Prince Edward Island Mineral Development Subsidiary Agreement was conducted over 1988. That year's activities continued the qualitative and quantitative analysis of present and potential quarry sites.[4]

Taxation Matters Affecting the Industry

General Taxation

The 26 June 1986 budget announced the province would move to a dual-rate corporate income tax system. The corporate tax rate for small businesses remained unchanged at ten percent, while the rate for large corporations rose to 15 percent of taxable income for large corporations. These changes came into effect on 1 January 1987.

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[1] *Geology of Prince Edward Island*, by H.W. van de Poll for the Department of Energy and Forestry, Energy and Minerals Branch, Queen's Printer, Charlottetown, P.E.I., 1983, p. 4.

[2] *1987 Provincial Geologists Journal*, Published by the Committee of Provincial Geologists, Vol. 5, p. 69.

[3] *1988 Provincial Geologists Journal*, Published by the Committee of Provincial Geologists, Vol. 6, p. 73.

[4] *Ibid.*

The 5 April 1988 budget announced changes to the *Real Property Assessment Act* which came into force on 1 January 1989. Bill 17 required the minister to appraise all real property in the province at a minimum of once every five years, replacing the three-year requirement. Bill 72, which received Royal Assent on 17 May 1988, exempted property designated as a natural area or a wildlife management area from real property tax.

14. Newfoundland

Introduction

Industry Trends

> Iron ore accounts for over 80 percent of the provincial mineral industry; the two other leading minerals are zinc and asbestos. The mineral industry comprises approximately 12 percent of the Gross Provincial Product.[1] In 1989, the value of mineral production was estimated at $959 million, little changed from the 1985 level of $927 million.[2]

The depressed Newfoundland economy and mineral industry began to improve in the latter half of the 1980s. The opening of the Hope Brook gold mine, the reactivation of the St. Lawrence fluorspar operations and the continuation of the Baie Verte asbestos mine all provided some relief to a beleaguered mineral industry. Nevertheless, the total value of mineral production fell in 1987 to $767 million, because of a decline in iron ore production in western Labrador.[3] Production values for nonferrous minerals continued to improve in 1988 and 1989, reflecting a surge in the international economy.[4] The outlook for the 1990s, however, was bleak as three of the province's major mines closed.

Two iron ore operations, Wabush Mines at Wabush and Iron Ore Company of Canada at Labrador City, account for 85 percent of the province's mining industry. Although base metals have long been mined in the province, only the Daniel's Harbour mine of Newfoundland Zinc Mines Ltd. remained in operation throughout 1985-89. By 1989, however, that mine, too, shut down as a result of exhausted reserves.

The Baie Verte asbestos mine was purchased in August 1987 by Mineral Commodities Limited Group. A planned $20-million expansion, including a wet milling process, was expected to improve recovery rates.[5] In 1986, Minworth Ltd. reopened the St. Lawrence fluorspar mine which had been closed since 1977. Construction work on Newfoundland Resources and Mining Company's limestone aggregate operation was completed in 1989. The operation is located at Lower Cove, Port au Port.[6]

Base metal exploration remained active throughout the latter half of the decade. Record highs in claim-staking were reached in the period, as gold discoveries contributed to the growth of interest in mineral exploration. In 1987, mineral exploration levels increased 275 percent, reaching a record high of $32.5 million. Interest in gold exploration remained strong throughout 1988, particularly in the Baie Verte and Springdale Peninsula Areas. Healthy levels of exploration activity were maintained in 1989.

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[1] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1988*, p. 3.2.

[2] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook, 1989.*

[3] Newfoundland and Labrador, *Budget 1988*, 29 March 1988, p. 3.

[4] Newfoundland and Labrador, *Budget 1989*, p. 6.

[5] Energy Mines and Resources Canada, *Canadian Minerals Yearbook, 1987*, p. 3.2.

[6] Prospectors and Developers Association of Canada, *Exploration and Development Highlights*, March 1991, p. 54.

Highlights of Government Initiatives

The provincial government provided various forms of assistance to the mineral industry throughout 1985-89. The $22-million Canada/Newfoundland Mineral Development Agreement (CNMDA) was signed in 1984 and terminated in 1989. Growing interest in Newfoundland's industrial minerals (including asbestos, gypsum, silica, elemental phosphorus, slates, limestone and dolomite, and marble) was fostered by some feasibility and market studies funded by the CNMDA.[7] In 1988, the CNMDA was amended to include a Mineral Industry Assistance Program.

Along with other initiatives, the provincial Department of Mines and Energy undertook two economic assessments: Daniel's Harbour zinc mine and the Iron Ore Company of Canada dolomite project. Provincial regulatory and tax initiatives included amendment of the Mining and Mineral Rights Tax Act, The Mineral Holdings Impost Regulations, 1978, The Mineral Act, 1986, and The Quarry Materials Act, 1976. The Department of Mines and Energy Act, 1989 (Bill 25), establishing a new Department of Mines and Energy, received Royal Assent on 18 December 1989.

Mineral-Related Task Forces and Studies

Flow-through shares. In its March 1988 budget, the provincial government announced that it would establish a government-industry group to examine how changes to the federal flow-through share provisions would affect mineral exploration.[8]

Crown Corporations, Direct Investment/Equity Participation

In 1986 and 1987, the province acquired equity in the Baie Verte asbestos mine in the form of preferred shares, in return for $12 million in funds for a waste removal program.[9] The province also provided Baie Verte Mines with other assistance (see below).

Assistance Initiatives

Direct Assistance/Grants and Subsidies

Baie Verte Mines reopened in February 1985 after temporarily closing its asbestos operation at the end of December 1984. A federal/provincial committee had been established in 1982. In 1986, the monitoring committee became a provincial initiative. The province paid an "expropriate award" of $2.4 million in 1985 which was to be repaid out of future profits of the mine. In 1986 and 1987, the province provided $12 million for a waste removal program in return for preferred shares.[10] Between 1982 and 1989, the province had provided loan guarantees totalling $27.9 million, of which $20 million was "converted" to interest-bearing preferred shares.

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[7] Energy, Mines and Resources Canada, *Canadian Minerals Yearbook*, 1989, p. 3.3.

[8] Millie Goodman and Deborah L. Ort, *Tax Memo: 1988 Tax Developments*, Canadian Tax Foundation, No. 75, March 1989.

[9] Newfoundland and Labrador, *Throne Speech*, 18 March 1986. See also, Newfoundland Department of Energy and Mines, n.d.

[10] *Ibid.*

Baie Verte Mines Reprocessing Inc., received loan guarantees totalling $3.5 million during 1989-90. Both these loans were repaid by the company in 1990.[11]

Minworth Ltd. reopened the St. Lawrence fluorspar mine, closed since 1977. The company received both federal and provincial assistance. The Burin Peninsular Development Fund (70 percent federal and 30 percent provincial funding) contributed $7 million. In addition, the provincial government provided a total of $3.3 million in loan guarantees from 1987 to 1989.[12]

The provincial government provided assistance in 1987 for Newfoundland Zinc Mines at Daniel's Harbour (66.44 percent owned by Teck Corporation and 35.56 percent by Amax Inc.), which had closed in April 1986 because of low zinc prices. The company also received provincial support in the form of a $420,000 "repayable maintenance grant" to assist with costs incurred during the shutdown, as well as a $2-million repayable reactivation grant during 1987 and 1988. All principal and interest outstanding on the two grants were repaid in 1989.[13]

BP-Selco's Hope Brook Mine, which was expected to be the sixth most productive gold mine in Canada, received a $4-million loan, as well as infrastructure assistance, from the provincial government in 1986. The loan was to be repaid in annual instalments after the $144-million project reached completion.[14] Total provincial assistance in the Hope Brook gold mine project, including grant and loan assistance and the provision of a main power line to Burgeo, was $19.5 million for 1987-88.[15] The federal government also provided assistance in the form of a $14-million contribution under the Industrial and Regional Development Program to assist Hope Brook Gold Inc. establish its milling operation. No repayment was required for the first three years of production, beginning in 1988.[16]

Canada/Newfoundland Mineral Development Agreement (CNMDA). The five-year, $22-million CNMDA, which was signed in 1984, carried out numerous activities in geoscience, mining and minerals technology, economic development and public information programs.

Projects funded under the CNMDA included regional geological mapping, delineating a dolomite deposit at Wabush, exploratory drilling for marble deposits in Roddickton and silica deposits in Labrador, investigating central Newfoundland's gold potential, assessing two quartzite deposits north of Labrador City, and conducting studies on marketing opportunities for the province's industrial minerals.[17]

In 1988, the CNMDA was amended to include a federal contribution of $500,000 to Newfoundland's *Mineral Industry Assistance Program*, which was to provide direct financial assistance to individuals and companies involved in mineral resource development. Funding was assigned to a Feasibility Demonstration Program, the Industrial Minerals Infrastructure Program and the Prospectors Assistance Program.

- The *Feasibility/Demonstration Program* provided assistance to mine operators who were eligible to receive funding up to $50,000 (or 50 percent, whichever was less) to finance studies on the economic feasibility of proposed mineral development projects.

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[11] Government of Newfoundland and Labrador, Department of Mines and Energy.

[12] *Ibid.*

[13] Newfoundland, "Western Newfoundland: Prospects and Activities in the Minerals and Energy Sectors," speech by the Honourable Jerome W. Dinn, 16 June 1986, Corner Brook. See also, Government of Newfoundland and Labrador, Department of Mines and Energy, n.d.

[14] Newfoundland, "News Release," 28 August 1986.

[15] Newfoundland and Labrador, *Budget 1987*, p. vii.

[16] Canada-Newfoundland, "MDA Newsletter," Vol. 1, No. 1, October 1986.

[17] Canada-Newfoundland, "MDA Newsletter," Vol. 1, No. 2, November 1986.

- The *Industrial Minerals Infrastructure Program* provided funding up to $100,000 (or 50 percent, whichever was less) to finance infrastructural costs of nonmetallic mineral operations.
- The *Prospector's Assistance Program* was established to allow applicants to receive up to $5,000 towards a season's field expenses.[18] Twenty applications at a maximum of $5,000 were approved under the Prospectors Assistance Program.

Research projects carried out under the CNMDA included such studies as ways to improve recovery of iron ore, the use of dolomite as a reducing agent in iron ore pellets in Labrador, the development of higher-quality concrete, the metallurgy of potentially economic base-metal deposits, and tailings from abandoned mining operations to assess whether recoverable economic minerals remained in the tailings.

Infrastructure Assistance

A $20-million powerline was built by Newfoundland and Labrador Hydro from Bottom Brook to Burgeo in 1986. The province contributed $11 million of the funding to the Hope Brook gold project. In addition, the province allocated $6 million for other infrastructure including a 31-km spur line to the minesite, and construction of a wharf and marine terminal at Couteau Bay.[19]

Newfoundland and Labrador Hydro spent $13 million in 1987-88 to extend the provincial power grid to the Hope Brook gold mine and to interconnect the communities of Burgeo and Grand Bruit.[20]

Regulation of the Mineral Industry

The Engineers and Geoscientists Act was proclaimed on 31 December 1989, ensuring that professional geoscientists become registered with the Association of Professional Engineers and Geoscientists of Newfoundland.[21]

Mining Regulation

The Quarry Materials Act, 1976 was amended on 18 December 1989 to make the Act binding on the Crown. In addition, a permit must be obtained *before* initial digging at a quarry, replacing the previous regulation which required a permit only when material was removed.

The Department of Mines and Energy Act, 1989 was passed, receiving Royal Assent on 18 December 1989. The Act established a new Department of Mines and Energy and made a minor amendment to the *Mineral Holdings Impost Act*.[22]

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[18] Canada-Newfoundland, "News Release," 22 August 1988.

[19] Newfoundland, "News Release," 28 August 1986.

[20] Newfoundland and Labrador, *Budget 1987*, p. x.

[21] Prospectors and Developers Association of Canada, *Exploration and Development Highlights*, March 1991, p. 57.

[22] Millie, Goodman, *Tax Memo: 1989 Tax Developments*, Canadian Tax Foundation, No. 76, March 1990.

Health and Safety Regulation

Workers' Compensation. The 1989 Workers' Compensation Rates increased in three categories related to mining: iron ore, pyrophylite and asbestos operations increased 20 cents to $2.10 per $100 of payroll; stone, sand and gravel (quarry) increased 50 cents to $4.00; and zinc was lowered 25 cents to $3.00.[23]

The *Workers' Compensation Act* was amended at the end of 1979 to give Cabinet the power to increase benefits payable. The Act was amended again in 1982 and then replaced by the Workers' Compensation Act (1983), which became effective in 1984.

In September 1986, a decision was reached by the Supreme Court of Newfoundland which had profound significance for WCBs across Canada. The Court found that sections 32 and 34 of the Workers' Compensation Act (1983) violated section 15(1) of the Canadian Charter of Rights and Freedoms, in that they prevented workers from suing their employers for damages in the event of an accident. Since this principle is one of the underlying features of all WC systems in Canada, the decision, if allowed to stand, would have necessitated a drastic change in WC legislation and operations across the country. However, an appeal was made to the Newfoundland Court of Appeal in October 1987, and the decision was reversed.

Taxation Matters Affecting the Industry

General Taxation

The 2 April 1987 budget exempted new small businesses from provincial corporate income tax for the initial three-year period of operation, covering a two-year period beginning 2 April 1987. The 6 June 1989 budget extended the tax holiday for another two years for small businesses incorporated 3 April 1989 to 2 April 1991.

The 29 March 1988 budget introduced a Newfoundland stock savings plan and the venture capital tax credit program to encourage investment in qualifying equity capital issues of corporate businesses in Newfoundland. Two acts received Royal Assent on 8 July 1988: *The Stock Savings Tax Credit Act* (Bill 34) and the *Venture Capital Act* (Bill 35). The acts were effective on proclamation, 10 November 1988.

The 6 June 1989 budget of the new Liberal administration announced that corporate income tax rates would be increased from 16 to 17 percent, effective 1 July 1989, for those companies with income exceeding $200,000.[24] *The Gasoline Tax Act* (1978) was amended, effective 30 June 1989, to increase gasoline and motive fuel tax rates by 1 percent, raising them to 23 and 27 percent, respectively.

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[23] Government of Newfoundland and Labrador, Department of Mines and Energy.

[24] Newfoundland and Labrador, *Budget 1989*, p. 17.

Mining Taxation

The Mineral Holdings Impost Regulations (1978) were amended several times between 1985 and 1989 to lower the rates of interest on outstanding taxes and penalties. Bill 12, which removed the continuing tax liability where mineral holdings were forfeited to the Crown, became effective when it received Royal Assent on 8 July 1988.

The Quarry Materials Regulations (1977) were amended to impose a new royalty and rental schedule. The regulations were further amended to make the Act binding upon the Crown and to make it necessary to obtain a permit for the initial digging of a quarry.[25] Bill 18, an *Act to Amend the Quarry Materials Regulations Act*, received Royal Assent on 18 December 1989.

The Mining and Mineral Rights Tax Regulations were amended in 1988 to exempt from taxation those persons who are liable to pay royalties under The Quarry Materials Act but excavate less than 250,000 cubic metres of quarry materials annually.[26]

Mining and Mineral Rights Tax Act was reviewed in 1988 by the Department of Finance in order to clarify and update certain sections of the Act.

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[25] Prior to the amendment, it was required only when material was removed.

[26] Millie Goodman and Deborah L. Ort, *Tax Memo: 1988 Tax Developments*, Canadian Tax Foundation, No. 75, March 1989, p. 100.

Appendix I

Table 2. Canada, value of mineral production by provinces and territories, 1985-89*
($ million)

	1985	1986	1987	1988	1989
Yukon	60	176	437	492	534
Northwest Territories	671	669	715	827	960
British Columbia	2,646	2,512	2,897	3,326	3,344
Alberta	1,278	1,560	1,200	1,225	1,067
Saskatchewan	1,319	1,205	1,465	1,822	1,527
Manitoba	681	668	891	1,548	801
Ontario	4,540	4,743	5,571	6,815	7,173
Quebec	2,243	2,191	2,780	2,711	2,856
New Brunswick	509	502	624	911	864
Nova Scotia	321	367	407	453	442
Prince Edward Island	2	2	2	3	2
Newfoundland	870	817	743	864	896
Total	15,140	15,412	17,732	20,997	20,466

Source: Energy, Mines and Resources Canada, *Canadian Minerals Yearbooks, 1985-89*.

* does not include oil and gas.

Note: dollars current for each year.

Table 3. Value of production for leading minerals in the provinces, territories and Canada, 1989 ($ million)

Newfoundland	
Iron Ore	722.5
Gold	x
Zinc	58.9
Asbestos	24.9
Sand and gravel	18.0
Total	896.4
Prince Edward Island	
Sand and gravel	2.2
Total	2.2
Nova Scotia	
Coal	199.5
Gypsum	53.8
Sale	x
Cement	x
Tin	x
Stone	33.7
Total	441.5
New Brunswick	
Zinc	433.7
Potash (K_20)	x
Lead	67.8
Coal	33.7
Peat	24.9
Total	864.1
Quebec	
Gold	536.7
Iron ore	x
Copper	220.9
Stone	230.5
Titanium dioxide	x
Zinc	216.6
Total	2,855.8
Ontario	
Nickel	2,010.1
Gold	1,142.4
Copper	922.1
Uranium	500.3
Zinc	572.8
Cement	444.4
Total	7,257.2
Manitoba	
Nickel	1,032.2
Copper	171.2
Zinc	155.1
Petroleum, crude	90.1
Total	1,688.2
Saskatchewan	
Petroleum, crude	1,237.3
Potash (K_20)	x
Natural gas	238.9
Uranium (U)	412.3
Total	3,011.3
Alberta	
Petroleum, crude	9,055.3
Natural gas	4,624.7
Natural gas by-product	1,570.2
Coal	500.3
Sulphur, elemental	374.8
Total	16,455.8
British Columbia	
Copper	1,045.6
Coal	1,059.0
Natural gas	472.3
Petroleum, crude	268.9
Gold	227.0
Sand and gravel	156.6
Zinc	256.9
Total	4,123.3
Yukon	
Zinc	332.9
Lead	98.3
Gold	82.1
Silver	14.9
Total	533.9
Northwest Territories	
Zinc	708.0
Petroleum, crude	178.1
Gold	177.3
Lead	41.3
Total	1,149.3
Canada	
Petroleum, crude	10,862.9
Natural gas	5,394.3
Copper	2,388.7
Zinc	2,739.2
Gold	2,315.9
Natural gas by-product	1,620.3
Nickel	3,042.3
Coal	1,907.1
Iron ore	1,369.2
Potash (K_20)	1,017.5
Grand Total	39,259.1

Source: Energy, Mines and Resources Canada, *1989 Canadian Minerals Yearbook*.

x Confidential

Appendix II

Principal Written Sources

The Canadian Mineral Industry Monthly Report, Department of Energy, Mines and Resources, Ottawa.

Canadian Mining Journal, Southam Business Publications, 1450 Don Mills Road, Don Mills, Ontario M3B 2X7 (monthly)

Canadian Mining Taxation, Price Waterhouse, Toronto, 1983.

Canadian Tax Journal, Canadian Tax Foundation, 1 Queen Street East, Toronto, Ontario M5C 2Y2 (bi-monthly).

CIM Bulletin, The Canadian Institute of Mining, Metallurgy and Petroleum, 1210-3400 de Maisonneuve Boulevard West, Montreal, Quebec H3Z 3B8 (monthly).

Coal Focus, The Coal Association of Canada, 502-205 9th Avenue SE, Calgary, Alberta T2G 0R3.

The Financial Post, 777 Bay Street, Toronto, Ontario M5W 1A7 (weekly).

The Globe and Mail, 44 Front Street West, Toronto, Ontario M5V 2S9.

The Inco Clipper, Inco Limited's internal clipping service.

Mining Magazine, The Mining Journal Limited, 60 Worship Street, London EC2A 2HD (monthly).

The Northern Miner, Southam Mining Group, 1450 Don Mills Road, Don Mills, Ontario M3B 2X7 (weekly).

The PDA Digest, Canadian Mining Journal, Southam Business Publications, 1450 Don Mills Road, Don Mills, Ontario M3B 2X7 (eight times a year).

Mining Journal, The Mining Journal Limited, 60 Worship Street, London EC2A 2HD (weekly).

Provincial and Municipal Finances 1984, Canadian Tax Foundation, Toronto, 1984.

Tax Memo: Tax Developments, various years, Canadian Tax Foundation, Toronto.

General – Federal and provincial government press releases, statements, speeches, and publications, etc., and publications, brief and statements from mining associations and companies.

Government Sources for Further Information

Federal Departments

Department of Energy, Mines and Resources Canada

Mineral Policy Sector
460 O'Connor Street
Ottawa, Ontario K1A 5H3

Canada Centre for Mineral and Energy Technology (CANMET)
555 Booth Street
Ottawa, Ontario K1A 0G1

Department of Indian Affairs and Northern Development
Les Terrasses de la Chaudière
Ottawa, Ontario K1A 0H4

Northern Resources and Economic Planning Branch

Mining Management and Infrastructure Directorate

Employment and Immigration Canada
Manpower Planning, Mining
Place du Portage, Phase IV
140 Promenade du Portage
Hull, Québec K1A 0J9

Department of Regional Industrial Expansion
Metals and Minerals Directorate
235 Queen Street
Ottawa, Ontario K1A 0H5

Environment Canada

Federal Environmental Assessment Review Office
Fontaine Building
Ottawa, Ontario K1A 0H3

Environmental Protection Service
Les Terrasses de la Chaudière
Hull, Québec K1A 0H3

Department of Finance
Tax Analysis, Energy and Mining
Place Bell Canada, 160 Elgin Street
Ottawa, Ontario K1A 0G5

Labour Canada
Occupational Health and Safety
Hull, Québec K1A 0J2

Federal Crown Corporations and Agencies

Atlantic Canada Opportunities Agency
Centennial Towers
200 Kent Street, 15th Floor
Ottawa, Ontario K1P 0E6

Atomic Energy Control Board
Martel Building
270 Albert Street, P.O. Box 1046
Ottawa, Ontario K1P 5S9

Atomic Energy of Canada Limited
344 Slater Street
Ottawa, Ontario K1A 0S4

Cape Breton Development Corporation
P.O. Box 2500
Sydney, Nova Scotia B1P 6K9

Eldorado Nuclear Limited
360 Albert Street
Ottawa, Ontario K1P 6A9

Export Development Corporation
110 O'Connor Street, P.O. Box 655
Ottawa, Ontario K1P 5T9

Investment Canada
240 Sparks Street
Ottawa, Ontario K1P 6A5

Western Economic Diversification Office
Canada Place
1500 - 9700 Jasper Avenue
Edmonton, Alberta T5J 4H7

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525 Superior Street
Victoria, British Columbia V8V 1X4

B.C. Hydro and Power Authority
970 Burrard Street
Vancouver, British Columbia V6Z 1Y3

Ministry of Finance
Economics and Policy Division
Parliament Buildings
Victoria, British Columbia V8V 1X4

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9945-108th Street
Edmonton, Alberta T5K 2G6

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1914 Hamilton Street
Regina, Saskatchewan S4P 4V4

Department of Labour
1914 Hamilton Street
Regina, Saskatchewan S4P 4V4

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1855 Victoria Avenue
Regina, Saskatchewan S4P 3V5

Potash Corporation of Saskatchewan
Suite 500, 122 - 1st Avenue South
Saskatoon, Saskatchewan S7K 7G3

Saskatchewan Minerals
Chaplin, Saskatchewan S0H 0V0

Saskatchewan Mining Development Corporation
122 - 3rd Avenue North
Saskatoon, Saskatchewan S7K 2H6

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Department of Energy and Mines
Mineral Resources Division
555 - 330 Graham Avenue
Winnipeg, Manitoba R3C 4E3

Manitoba Mineral Resources Limited
603 - 491 Portage Avenue
Winnipeg, Manitoba R3B 2E4

Department of Finance
Taxation Division
103 Legislative Building
Winnipeg, Manitoba R3C 0V8

Ontario

Ministry of Northern Affairs and Mines
Mineral Resources Group
Whitney Block, Parliament Buildings
Toronto, Ontario M7A 1W3

Ministry of Treasury and Economics
Frost Building South
Queen's Park
Toronto, Ontario M7A 1Y7

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Ministère de l'Énergie et des Ressources
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P.O. Box 1087
Halifax, Nova Scotia B3J 2X1

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1809 Barrington Street
Halifax, Nova Scotia B3J 3K8

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Department of Mines and Energy
P.O. Box 8700
St. John's, Newfoundland A1B 4J6

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The Centre for Resource Studies

The Centre for Resource Studies (CRS) was established in 1973, under the sponsorship of Queen's University, the federal Department of Energy, Mines and Resources, and The Mining Association of Canada, to carry out a program of research and publication on mineral policy issues.

The Centre provides opportunities for multidisciplinary research in resource studies at Canadian universities, furnishes reliable information on matters related to mineral resource policy, and promotes closer liaison between government, industry and other concerned groups. The research program is carried out both at the Centre and by means of contracts with qualified investigators, usually at Canadian universities. Small exploratory studies are also funded, through a system of grants-in-aid of research. CRS Policy Discussion Seminars involve representatives from governments, industry, universities, labour, and other interested groups in working sessions on issues of current concern. Through this program of research and seminars, and the resulting publications, the Centre contributes to informed discussions and a better understanding of significant issues.

The Centre is governed by a Board of Directors which establishes general policy and priorities for research. The chairman is Dr. R.W. Boadway and the executive director is Mrs. Margot Wojciechowski. There are sixteen Directors – nine nominated by Queen's University, four by The Mining Association of Canada, and three by the federal government. Guidance on the research program, together with discussion of policy issues and other matters, is provided by the Advisory Council. This body comprises all researchers associated with the Centre, together with members appointed from such groups as governments, industry, labour, and other interests. A Research Advisory Committee aids in the selection of research proposals. The executive director and staff are responsible for the work of the Centre within this framework.

Most of the funding for the Centre's activities is provided by the sponsors. In addition, the Centre accepts contracts from other organizations interested in mineral policy research.

List of CRS Publications

Monographs

M 26 **Uranium Mining in Canada and Australia: The Impact of Taxation**, by B.W. Mackenzie, R.T. Whillans, R.M. Williams, and M.D. Doggett; 199 pp, 1991

M 25 **U.S. Trade Barriers and Canadian Minerals: Copper, Potash and Uranium**, by D.G. Haglund and A. von Bredow; 211 pp, 1990

M 24 **Federal and Provincial Taxation of the Canadian Mining Industry: Impact and Implications for Reform**, by R.W. Boadway, K.J. McKenzie, and J.M. Mintz; 207 pp, 1989

M 23 **Metals Demand and the Canadian Metal Industry: Structural Changes and Policy Implications**, by C. Nappi; 145 pp, 1989

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Index

Abandoned Mine Remedial Work Program 76
Aboriginal issues *(see also specific programs)* 2, 17, 28, 29, 32, 33, 40, 52, 64, 86
Accelerated Mine Exploration Program 48
access roads 35-37, 50, 62, 73, 97, 111
Acid Mine Drainage Task Force 51
Acid Rain Abatement Program 1, 19, 111
Act to Revise the Mining Act 93
Action Committee on Western Canadian Low-Sulphur Coal 5, 7, 46, 60, 70, 74
Action Force on Arctic Initiatives 40
Action Force on Economic Development 40
advanced industrial materials 61
Advisory Committee on Junior Resource Financing and the Competitive Position of Ontario 94
aggregates 93, 101, 106, 132, 134
Aggregates Resources Act 93, 101
Alberta Energy Company 61
Alberta Natural Gas Company 59, 61
Alberta Office of Coal Research and Technology 63
Alberta Oil Sands Equity 61
Alberta Research Council 11, 63
aluminum 61, 63, 110
An Act to Amend the Mining Act 100, 107
An Act to Amend the Public Lands Act 100
antimony 119, 121
asbestos 1, 7, 23, 55, 88, 108, 109, 111, 112, 116, 117, 129, 134, 135, 138
Athabasca Native Development Corporation 64
Athabasca Sand Dunes Park Land Reserve 75

B.C. Hydro 49, 51
Baie Verte Mines 134-136
Bas-Saint Laurent 114
Basel Convention 20
Bituminous Shale Act 126
Brundtland Commission 1, 18
Brunswick Mining and Smelting (BM&S) 119, 121, 122

cadmium 40, 69, 87
Cambior Inc. 109, 112, 113
Cameco Corporation 6, 69, 72

Page References

Federal 1-32
Territories 33-44
British Columbia 45-58
Alberta 59-68

Saskatchewan 69-81
Manitoba 82-91
Ontario 92-107
Québec 108-118

New Brunswick 119-125
Nova Scotia 126-131
Prince Edward Island 132
Newfoundland 134-139

Canada Development Corporation 5
Canada Mining Regulations 30, 31
Canada/Alberta Northern Development Subsidiary Agreement 62
Canada-Ontario-Industry Rockburst Project 12, 98
Canada/Saskatchewan Subagreement on Advanced Technology 74
Canada-U.S. Free Trade Agreement 2, 22, 24, 39, 66, 69, 89, 116, 128, 131
Canada/Yukon Economic Development Agreement 35, 36
Canada/Yukon Small Business Incentive Sub-Agreement 35
Canadian Continental Drilling Program 10
Canadian Exploration Incentive Program 3, 27
Canadian Jobs Strategy 14
CANMET 2, 7, 11-14, 51, 63, 88, 97, 98, 122, 130
Cape Breton Development Corporation 6, 128, 130
capital gains 25, 26
capital tax 25, 45, 57, 80, 81, 89, 90, 106, 138
Chibougamau-Chapais region 114
Cigar Lake 69, 71, 79
Clean Air Act 20
coal 1, 4-7, 11, 12, 35, 45-49, 51, 53, 55, 56, 58-60, 63, 65-67, 69, 70, 74, 76, 81, 119, 121, 122, 126-131
Coal Act 58
Coal Amendment Act 53
Coal Disposition Amendment Regulations 81
Coal Disposition Regulations 70
Coal Mining Research Centre 11
Coal Research Agreement 128
Coal Research Centre 11, 60, 63
Coal Research Grant Program 63
Coal Research Laboratory 11, 63
Coal Royalty Regulations 67
coal technology 48, 59, 74, 122, 126, 128-131
Code of Practice Respecting Asbestos 88
Cominco Inc. 45, 46
Commissioner of Critical Industries 49
Committee on Northern Economic Policy 41
Committee on Ontario's Future Mining Educational Needs 95, 96
community issues 14, 43, 47, 64, 82-84, 91, 94, 95, 99, 100
Community Economic Transformation Agreements 99
Compagnie minière Québec Cartier 110
Computerized Mining Land Information System 97
consultation 16, 17, 19, 29, 30, 34, 35, 43, 49, 53, 87, 90, 119, 126, 129
copper 1, 13, 24, 45, 50, 53, 69, 78, 82, 83, 85, 87, 92, 108, 111, 114, 120, 127
corporate income tax 25, 57, 67, 80, 89, 105, 117, 125, 132, 138
Corporate Income Tax Act 67
Corporation Capital Tax Act 80

Page References

Federal 1-32
Territories 33-44
British Columbia 45-58
Alberta 59-68

Saskatchewan 69-81
Manitoba 82-91
Ontario 92-107
Québec 108-118

New Brunswick 119-125
Nova Scotia 126-131
Prince Edward Island 132
Newfoundland 134-139

Council for Yukon Indians 16, 38
Crown Corporations/Equity Participation 2, 5, 61, 70, 80, 83, 96, 109, 135
  Alberta Energy Company 61
  Alberta Natural Gas Company Ltd. 59, 61
  Alberta Oil Sands Equity 61
  Baie Verte Mines 134-136
  Cameco Corporation 6, 69, 72
  Canada Development Corporation 5
  Cape Breton Development Corporation 6, 128, 130
  Eldorado Nuclear Ltd. 5, 6, 69, 73
  Hydro-Québec 110
  Magnesium Company of Canada Ltd. 61, 63
  Manitoba Mineral Resources 83
  Manitoba Potash Corporation 83
  Nanisivik Mines Limited 6
  Potash Corporation of Saskatchewan 69-71, 73, 78
  Saskatchewan Minerals 72
  Saskatchewan Mining Development Corporation (SMDC) 69, 71, 72, 75, 79
  Sidbec-Dosco Inc. 110
  Société Générale de Financement 110
  Société Nationale de l'Amiante 109
  Société Québecoise d'Exploration Minière (SOQUEM) 108, 109, 114
  Suncor Inc. 96
  Syncrude Canada Ltd. 59, 61, 64
  Tantalum Mining Corporation 83
  Westaim 61
Crown Mineral Royalty Schedule 75, 81
Crown Minerals Act 70, 75
Curragh Resources Inc. 10, 33, 35-37, 39

Dangerous Goods Transportation Act 38, 102
databases 10, 14, 34, 50, 62, 95, 97
Dene/Metis Land Claim 17
Denison Mines Limited 12, 56, 76, 105, 119
Department of Energy Act 67
Department of Mines and Energy Act, 1989 135, 137
devolution 30-32, 34
Diesel Emission Control Technology 13
Direct Assistance 3, 6-15, 35-38, 41, 42, 45, 46, 48-51, 55, 60, 62-64, 70, 72-74, 82, 84, 85, 96-99, 108, 110-114, 120-122, 126-128, 132, 135-137
  exploration 3, 45, 96, 108, 120, 126, 128,
  Geoscience Data 10, 11, 50, 62, 73, 85, 96, 112, 113, 122,
  Human Resources 14, 15, 37, 64, 73, 98, 99,
  Infrastructure 36, 37, 41, 51, 62, 73, 137

Direct Assistance, continued
  Mineral Development Agreements 3, 7, 36, 41, 42, 46, 49, 50, 55, 62, 70, 72, 82, 84, 85, 110-113, 120, 121, 127, 128, 132, 136
  Research and Development 3, 10-14, 51, 60, 63, 73, 97, 98, 110-113, 122, 128
drill-core storage 121

Earth Sciences Centre 98
Eastern Québec Development Plan 114
economic development 4, 6, 7, 10, 11, 34-37, 39-42, 45, 46, 51, 55, 62, 66, 72, 74, 85, 93, 96, 97, 99, 114, 120, 136
Economic Development Electricity Rate Act 51
Eldorado Nuclear Ltd. 5, 6, 69, 73
Eldorado Resources Limited 5, 6, 76
Employment and Immigration Canada 14, 15, 74
energy 1-4, 6, 7, 10-14, 16, 17, 19, 20, 22, 24, 33-36, 41, 42, 45-48, 50-54, 56, 59-61, 63, 64, 66, 67, 69-73, 76, 77, 79, 81-88, 92, 98, 105, 108, 110-114, 119-124, 126-132, 134-138
Energy, Mines and Resources Canada 1, 2, 4, 7, 10-14, 16, 17, 19, 20, 22-24, 33, 45, 51, 59, 61, 69, 82, 84, 88, 92, 98, 108, 110-113, 119, 121, 128, 134, 135
environment 1, 2, 4, 12, 13, 15, 16, 18-21, 29, 31, 38, 42, 43, 48, 51, 53, 54, 65, 75-77, 81, 82, 85-88, 94, 98, 101, 102, 113, 116, 122-124, 128-130
Environment Act 88
environmental assessment 43, 53, 75, 76, 87, 129, 130
Environmental Assessment Act 76, 87, 129, 130
Environmental Protection Act 18, 102
exploration expenses 26, 27, 48, 90, 96, 118
Exploration Incentives Program 35
explosives 19, 20
Explosives Regulations 20

Fahlgren Report 94
Falconbridge Limited 5, 95, 98, 101, 114
Feasibility/Demonstration Program 136
Federal Environmental Assessment Review Office 43
Federal/Provincial Task Force on the Expanded Use in Ontario of Western Canadian Low-Sulphur Coal 4, 46, 70
Financial Assistance for Mine Development Program 50
Financial Assistance for Mineral Exploration Program 45, 48, 49
flow-through financing 3, 26, 27, 33, 40, 45, 47, 80, 82, 92, 96, 108, 114, 118, 126, 135
foreign investment 2, 21, 30
Foreign Investment Review Agency (FIRA) 2, 21
Fort Chipewyan Development Corporation 62
Freehold Mineral Rights Tax Act 60, 64, 67
fuels 17, 20, 25, 45, 47, 57, 67, 69, 80, 93, 126, 130, 131, 138

Gasoline and Motive Fuel Tax 126, 138
Gasoline Tax Act 138
Gaspé 7, 108, 116
geochemical research 36, 49, 50, 73, 74
Geographic Information Systems 10
Geological Survey of Canada 12, 72, 97, 113
geoscience 7, 10, 31, 41, 48-50, 62, 73, 85, 95-97, 112, 113, 120-122, 127, 136
Geoscience Spatial Information System (GEOSIS) 97
Gitksan-Wet'en Tribal Nation 52
Going Global Investment Program 23
gold 1, 3, 5, 17, 33, 40, 42, 45, 50, 59, 69, 71-73, 75, 76, 82-84, 87, 92, 102, 104, 108, 109, 112, 114, 119-121, 126, 127, 134, 136, 137
Green Paper on Mines and Minerals 100
Ground Control and Emergency Preparedness in Ontario Mines 95, 97, 98
gypsum 1, 126, 135

hazardous substances 2, 19, 20, 54, 65, 76, 86, 88, 102, 129
Hazardous Substances Regulation 76
health and safety 2, 12, 20, 30, 38, 43, 49, 52, 54, 65, 77, 85, 88, 95-99, 102-104, 130, 138
Heath Steele 119-122
Hope Brook 134, 136, 137
Hudson Bay Mining and Smelting 19, 83, 85, 87
Hydro-Québec 110

Integrated Gasification Combined Cycle (IGCC) 74, 131
incentives 15, 27, 34-36, 40, 47, 52, 56, 60, 81, 93, 95, 118, 130
Inco Limited 5, 13, 18, 85, 87, 90, 92, 98, 101, 112
Income Tax Act 3, 26, 67, 125
Industrial Electricity Rate Discount Act 47, 51
industrial minerals 49, 50, 70, 72, 85, 86, 93, 94, 97, 101, 126, 127, 131, 135-137
Industrial Minerals Infrastructure Program 136, 137
Industry, Science and Technology Canada 14
information programs 2, 4, 7, 10, 20-23, 31, 34, 37, 38, 41-43, 50, 51, 60, 62, 64, 77, 84, 86-89, 93, 95-97, 102, 104, 107, 111, 119-122, 124, 126, 127, 129, 136
infrastructure 36, 37, 42, 43, 45, 47, 49-51, 56, 62, 66, 73, 83, 110-112, 126, 136, 137
International Centre on Sustainable Development 88
iron ore 14, 26, 92, 99, 108, 110, 111, 134, 135, 137, 138
Iron Ore Company of Canada 14, 134, 135

junior exploration and mining 3, 27, 35, 82, 87, 94, 95, 96, 100, 107, 127

kaolin 26

Labour Force Development Strategy 14, 15
Labour-Sponsored Venture Capital Corporation Act 80

land access and tenure 15-17, 29, 34, 38, 43, 46, 47, 51-53, 58, 64, 75, 85, 86, 100, 123, 128
Land Act Fees Regulation 57
land claims 2, 16, 17, 28-31, 34, 38, 40, 45, 47, 52, 100
Land Use Planning Program 43
Land-Related Information System 62
Laurentian University 95, 97, 98
lead 2, 6, 13, 20, 33, 35, 39, 40, 46, 119, 120, 124, 127
Leaded Gasoline Regulations 20
low-sulphur coal 4, 5, 7, 46, 60, 63, 66, 70, 74, 126, 129
Lynn Lake 82-85

magnesium 59, 61, 63, 110, 121
Magnesium Company of Canada 61, 63
Manitoba Hazardous Waste Management Corporation 86
Manitoba Jobs Fund 88
Manitoba Mineral Resources 83
Manitoba Potash Corporation 83
Manufacturing Investment Tax Credit 89
map staking 115
mapping/maps 10, 35, 36, 41, 49, 62, 72, 73, 85, 132, 136
McGill University 112
Metallic Minerals Royalty Regulation 67
Metallic Minerals Tax Act 126
methane detection 13
Mine Development Assistance 120
Mine Environment Neutral Drainage (MEND) 2, 13, 14, 51, 88, 98, 113, 122
Mine Reclamation Fund 125
mine safety 30, 38, 43, 85, 95, 97, 98
Mineral and Metal Policy 3
Mineral Development Agreements (MDA) 3, 7, 36, 41, 42, 46, 49, 50, 55, 62, 70, 72, 82, 84, 85, 110-113, 120, 121, 127, 128, 136
Mineral Dispositions Regulations 70
Mineral Economic Development Agreement 99
Mineral Holdings Impost Act 137
Mineral Holdings Impost Regulations (1978) 139
Mineral Industry Diversification Program 70
Mineral Industry Recovery Program 81
Mineral Industry Task Force 46, 47
Mineral Investment Stimulation Program 7, 121, 128
Mineral Land Tax Act 57, 58
Mineral Land Tax Assessment Regulation, 1983 57
Mineral Opportunities Program 50
Mineral Processing Investigations Program 7, 121
Mineral Resources Act, 1985 75

Page References

Federal 1-32
Territories 33-44
British Columbia 45-58
Alberta 59-68
Saskatchewan 69-81
Manitoba 82-91
Ontario 92-107
Québec 108-118
New Brunswick 119-125
Nova Scotia 126-131
Prince Edward Island 132
Newfoundland 134-139

Mineral Resources Program 36
Mineral Resources Subsidiary Agreement 36
Mineral Resources Tax 58
Mineral Tax Act 46, 58
Mineral Tenure Act 46, 52, 53, 58
Minerals Resources Act 1985 70
Mines Act 46, 54, 86
Mines and Minerals Act 60, 64, 67
MINFILE 50
Mining and Lands Commissioner 93
Mining and Mineral Rights Tax Act 135, 139
Mining and Mineral Rights Tax Regulations 139
Mining Community Reserve Fund 82-84, 91
Mining Duties Act 118
Mining Exploration Depletion Allowance 3, 26, 118
Mining Human Resource Investment Program 15
Mining Industry Recovery Sub-Agreement 10, 35, 36
Mining Industry's Fatalities Committee 102, 103
mining recorder 93, 97
Mining Research Laboratory 12
Mining Tax Act 57, 58, 90, 91, 93, 106, 107
Mining Industry Technology Council of Canada (MITEC) 14
Mobility Assistance Program 84
Motor Vehicle transport Act 21
MPLC Canadian Magnesium Holdings 59, 61, 63
Municipal/Industrial Strategy for Abatement 101

National Marine Parks Policy 15, 16
National Task Force on the Environment and the Economy 18
National Transportation Act 2, 21, 73
National Uranium Tailings Management Program 13
Natural Sciences and Engineering Research Council 74
New Technology Program 99
nickel 1, 13, 18, 50, 82, 85, 92
Noranda Inc. 19, 45, 111-113, 116, 119, 121
Norfund 99
Norsk Hydro Canada 110
North Dakota/Manitoba Co-ordinating Commission 89
Northern Accord 41
Northern Analytical Assay Lab 35
Northern Canada Power Commission 32, 34, 37, 42
northern development 6, 12, 16, 17, 28-32, 34-38, 41, 62, 74, 86, 92-96, 98, 99, 105
Northern Mineral Policy 16, 28-32
Northern Flood Agreement 86
Northern Ontario Heritage Fund Corporation 99

Page References

Federal 1-32
Territories 33-44
British Columbia 45-58
Alberta 59-68

Saskatchewan 69-81
Manitoba 82-91
Ontario 92-107
Québec 108-118

New Brunswick 119-125
Nova Scotia 126-131
Prince Edward Island 132
Newfoundland 134-139

Northern Ontario Regional Economic Development Program 93, 99
Northern Political and Economic Policy Framework 31
Northwest Territories Mining Act 29
Nova Scotia Power Corporation 128-130
Nova Scotia Power Corporation Pollution Abatement Program 129
Nova Scotia Uranium Inquiry 128

Occupational Health and Safety Act 77, 102, 103
Ocean Drilling Program 10
offshore mining 7, 10, 17
oil sands 1, 12, 59-62, 67, 68
Ontario Geological Survey 93-95, 98, 99
Ontario Hydro 4, 46, 60, 70, 101, 105
Ontario Institute of Mining Technology 96
Ontario Mine Development Fund 95
Ontario Mineral Exploration Program 96
Ontario Mineral Incentive Program 96
Ontario Mining Act 100
Ontario Mining Tax Act 106, 107
Ontario Prospectors Assistance Program 96
Ontario Share Ownership Plan 95

Pacific 2000 22, 23
Pacific Rim 22, 23, 55, 66, 79, 117
parks 2, 15, 16, 30, 45, 52, 53, 57, 75, 100, 110
peat 110, 119, 121, 122, 126
Placer Dome 98, 99
placer mining 17, 18, 29, 33, 34, 36, 38, 52, 59, 98, 99
Placer Mining Data Development Project 34
Pollution Prevention Regulations 76
potash 1, 13, 24, 69-73, 77-81, 83, 116, 119-124
Potash Corporation of Saskatchewan 69-71, 73, 78
Potash Production Tax 81
Potash Resource Payment Agreements 81
Potash Resources Act 24, 70, 78
Potash Tailings Program 13
Productivity and Technology Program 97
property tax 45, 49, 56, 133
prospecting assistance 47, 96, 114

Quarry Materials Act, 1976 135, 137
Quarry Materials Regulations (1977) 139
Québec Cartier Mining Company 112
Québec Geoscience Centre 113
Queen's University 21, 24, 78, 95, 98

Quintette Coal Ltd. 51, 56

railways 2, 19, 21, 47, 66
Reactive Acid Tailings Program 13
Real Property Assessment Act 133
reclamation 53, 76, 86, 101, 122, 124
recovery 2, 3, 10, 12, 14, 34-36, 42, 45, 63, 67, 81, 85, 87, 110, 115, 134, 137
Regional Resource Roads Program 37
Regulation 2, 15-21, 24, 29, 31, 34, 38, 39, 42, 43, 45, 47, 51-54, 57, 58, 64-67, 75-77, 85-89, 100-104, 107, 111, 115, 116, 123, 124, 126, 128-130, 137, 138
  Environmental Regulation 18-20, 31, 38, 43, 53, 54, 65, 75-77, 86-88, 101, 102, 116, 123, 126, 128
  Health and Safety 20, 38, 43, 54, 65, 77, 88, 89, 102-104, 116, 123, 130, 138
  Land Access and Tenure 15-17, 29, 34, 38, 43, 46, 47, 51-53, 58, 64, 75, 85, 86, 100, 123, 128
  Mining Regulation 17, 30, 64, 75, 86, 93, 100, 101, 115, 119, 123, 137
  Transportation 19-21, 38, 54, 65, 66, 76, 102
  Workers' Compensation 39, 45, 54, 65, 77, 88, 89, 102-104, 116, 123, 124, 130, 138
research and development 1-3, 5, 7, 10-14, 21, 36, 49-51, 57, 60, 61, 63, 66, 73-75, 81, 85, 86, 91, 95, 97, 98, 102, 105, 110-113, 117, 121, 122, 126, 128, 129, 131, 132, 137
Research Agreement Program 7
Resource Transportation Access Program 35, 37
Ressources Minières Rouyn 112
Rock Mechanics Program 122
Rockburst Research Program 12, 98
Rosehart Report 93, 94
Round Tables 65, 82, 88
royalties 10, 16, 17, 29, 31, 47, 64, 67, 68, 70, 81, 139

Safety Audit Program 54
Saskatchewan Minerals 72
Saskatchewan Mining Development Corporation (SMDC) 69, 71, 72, 75, 79
Saskpower 73
Sectoral Advisory Committees on International Trade (SAGITs) 22
share ownership 47, 95, 106
Sherbrooke Institute of Cartography 10
Sherritt Gordon 61, 82-85
Sidbec-Dosco Inc. 110
silver 6, 33, 40, 45, 50, 53, 69, 83, 92, 119, 120, 124
Single-Industry Commodities Program 99
skills development 14, 15, 74, 96
small business 25, 35, 57, 67, 117, 125
Small Business Venture Capital Act 57
Société Générale de Financement 110
Société Nationale de l'Amiante 109

Société Québecoise d'Exploration Minière (SOQUEM) 108, 109, 114
spodumene 83, 84
staking 16, 17, 30, 45, 52, 86, 101, 115, 124, 134
Standing Committee on Mining and Environment 124
Star Lake 69, 71, 75
Statute Law Amendment 90, 91
Stock Savings Plan 67, 80, 117, 125, 127, 138
Stock Savings Tax Credit Act 80, 138
Stock Savings Tax Credit Regulations 80
Strathcona Park 52, 53
subsurface rights 16, 28
Successor Corporation Rules 26
sulphation roast leach 122
sulphur dioxide 4, 13, 19, 85, 87, 101, 111, 116, 122
Suncor Inc. 96
Suncor Oil Sands 59, 68
surface rights 16, 38, 52, 85, 86
Surface Rights Act 85, 86
Système Pour l'Observation de la Terre (SPOT) 10
Syncrude Ltd. 59, 61, 64

tailings 12-14, 42, 76, 77, 85, 87, 97, 113, 129, 137
Tantalum Mining Corporation 83
Task Forces and Studies
  federal 4, 5, 16, 28
  federal/provincial 46, 60, 127,
  provincial 46, 47, 60, 70, 93, 94-96, 120, 127, 135
  territorial 34, 35, 40, 41,
Task Force on Hazardous Waste Management 129
Task Force on Investment and Taxation 127
Task Force to Review Comprehensive Claims 16
Tax Recovery Act 67
Taxation
  General 25, 44, 56, 57, 67, 80, 89, 90, 105, 106, 117, 124, 125, 131, 132, 138
  incentives 3, 15, 27, 34-36, 40, 47, 52, 56, 57, 60, 81, 93, 95, 118, 121, 130
  Mining 25-27, 57, 58, 67, 80, 81, 90, 91, 106, 107, 117, 125, 139
  royalties 10, 16, 17, 29, 31, 47, 64, 67, 68, 70, 81, 139
Taxation Statutes Amendment Act 57
Technological Impact Research Fund 5
Technology Outreach Program 14
tin 126
Trade Initiatives
  International Trade 2, 22-25, 39, 55, 56, 66, 69, 78, 79, 89, 105, 116, 128, 131
  Intra-/Interprovincial Marketing 78, 105, 130

Page References

Federal 1-32
Territories 33-44
British Columbia 45-58
Alberta 59-68
Saskatchewan 69-81
Manitoba 82-91
Ontario 92-107
Québec 108-118
New Brunswick 119-125
Nova Scotia 126-131
Prince Edward Island 132
Newfoundland 134-139

Trade Initiatives, continued
  markets/marketing 2-4, 15, 22, 23, 26, 27, 33, 40, 49, 50, 53, 56, 60, 64, 69, 70, 73, 78-81, 83, 85, 92, 95, 105, 109, 128, 130, 135
  trade barriers 4, 19, 23, 24, 78, 79, 113, 116
Trade Development Corporation Act 55
Transport of Dangerous Goods Act 54
transportation 2, 5, 19-21, 34-38, 41, 43, 46, 47, 54, 55, 60, 62, 63, 65, 66, 73, 76, 83, 89, 94, 97, 102, 130
Transportation of Dangerous Goods Act 19, 21, 54, 76
Transportation of Dangerous Goods Control Act 65
Tumbler Ridge Gas Subsidy 51

Unemployment Insurance 15
U.S. Bureau of Mines 12, 13, 98
U.S. Department of Commerce 24, 78, 79
U.S. Department of Energy 24, 79, 87, 132, 135
U.S. Environmental Protection Agency (EPA) 23
University of Toronto 95, 98
uranium 1, 5, 6, 12, 13, 20, 21, 23, 24, 43, 51, 52, 54, 69-73, 75, 76, 78, 79, 81, 92, 105, 127-129, 132

venture capital 57, 80, 95, 138
Venture Capital Act 57, 138
Venture Capital Tax Credit Act 80

Water Power Act 90
Westaim 61
Western Economic Diversification 5, 62, 63
Western Transportation Industrial Development Program 62
Workers' Compensation 39, 45, 54, 65, 77, 88, 102-104, 116, 124, 125, 130, 138
Workplace Hazardous Materials Information System (WHMIS) 2, 20
Workplace Health Regulation 88

Yukon 2000 34
Yukon Development Corporation 34, 37
Yukon Economic Strategy 34, 36
Yukon Energy Alternatives Program 35
Yukon Fisheries Protection Agreement 17
Yukon Placer Implementation Review Committee 34
Yukon Placer Mining Act 17, 29
Yukon Quartz Mining Act 29
Yukon/Northwest Territories Transboundary Agreement 34

zinc 1, 6, 33, 35, 39, 40, 45, 46, 69, 82, 83, 85, 87, 92, 108, 119, 120, 124, 127, 134-136, 138

Page References

Federal 1-32
Territories 33-44
British Columbia 45-58
Alberta 59-68

Saskatchewan 69-81
Manitoba 82-91
Ontario 92-107
Québec 108-118

New Brunswick 119-125
Nova Scotia 126-131
Prince Edward Island 132
Newfoundland 134-139